ournal

of the **AMERICAN PHARMACEUTICAL ASSOCIATION**

OCTOBER
1959

Practical Pharmacy Edition

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(12) If "yes" give Particulars:.....

.....

(13) Have you consulted a physician for any illness during the past three years? Yes.....No.....

(14) If "yes" give Particulars:.....

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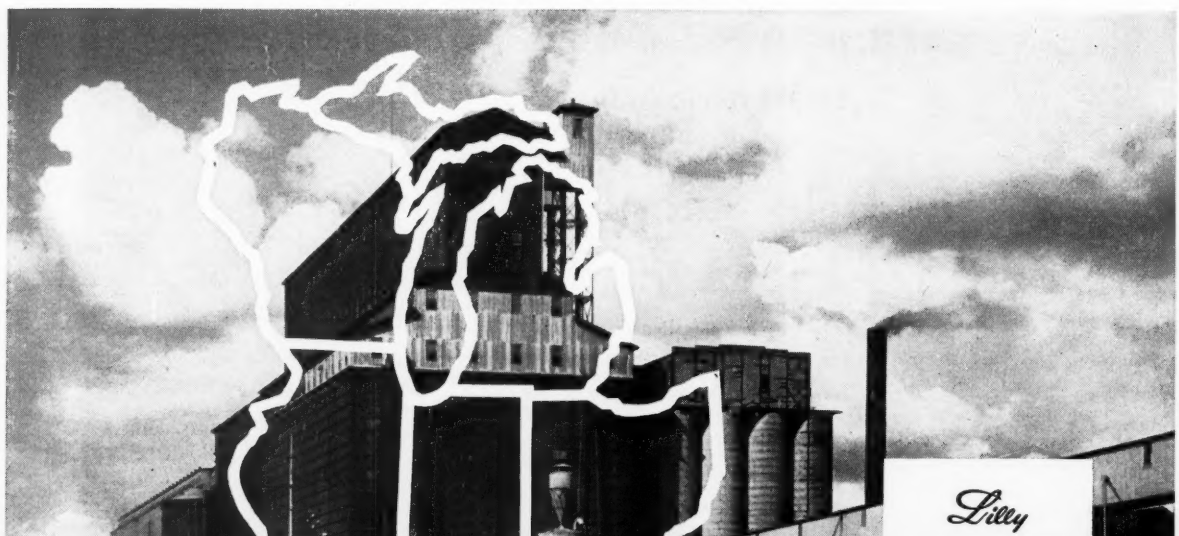

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Practical Pharmacy Edition

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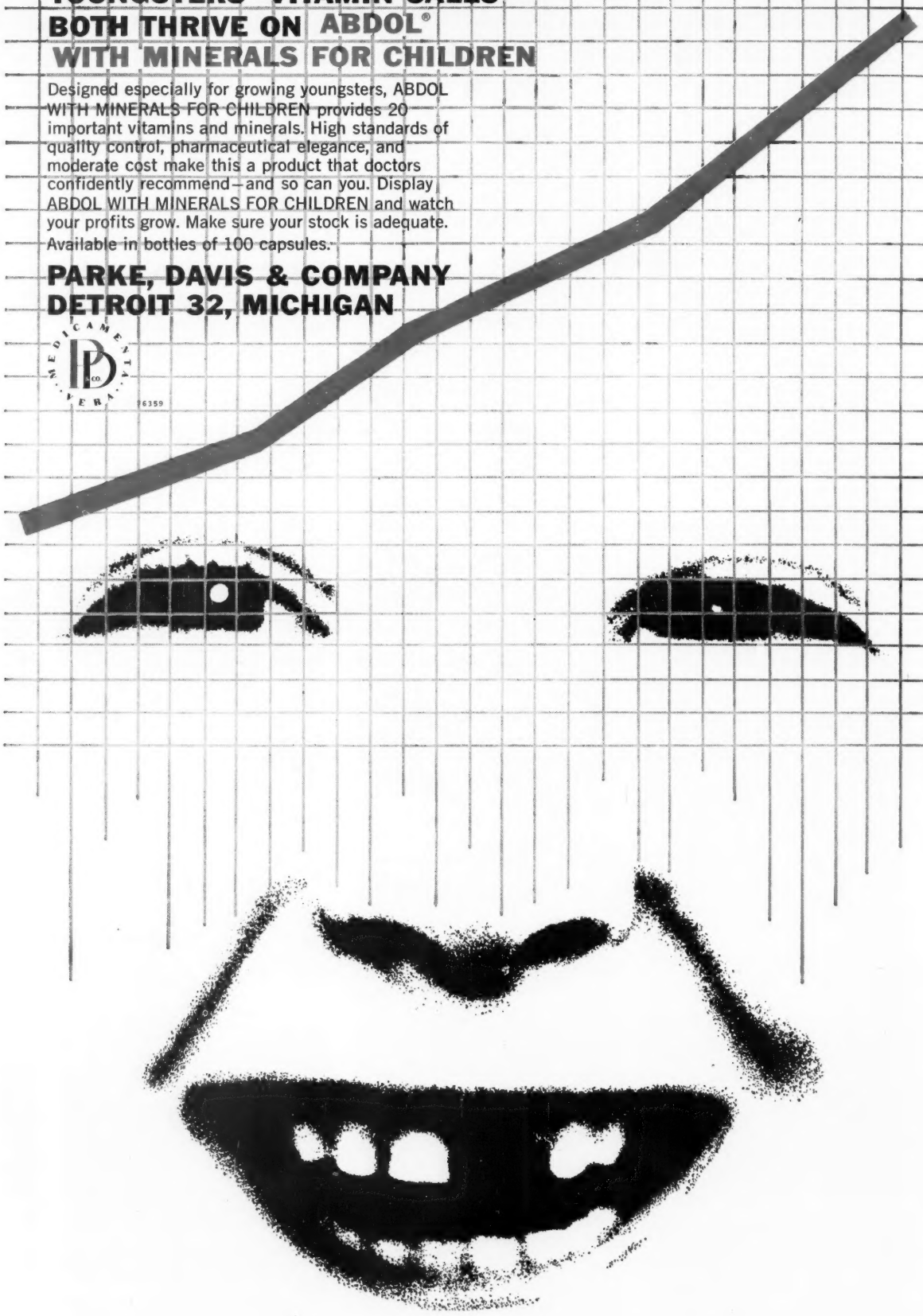


Washington Views

Status of Bills as of September 15, 1959—The following list gives the status of legislation of particular interest to pharmacists at the adjournment of Congress, September 15. Because this is the first session of the 86th Congress, bills not enacted or defeated do not die but hold over for the next session.

BILL NO.	AUTHOR	SUBJECT	STATUS
S. 535	Hennings	Amphetamine and barbiturates	Before Labor and Public Welfare
H.R. 33 H.R. 335 H.R. 4507	Boggs Byrnes Hull	Amphetamine and barbiturates	Before Interstate and Foreign Commerce
S. 2197	Hill-Goldwater	Color additives control	Passed Senate
H.R. 7624	Harris	Color additives control	Before Interstate and Foreign commerce; no hearings this session
S. Res. 191	Smathers	Drug prices study	Before Banking and Currency
Senate	Kefauver	Drug prices study	Hearings begin November 30
S. 1083	Humphrey	Fair Trade bill	Postponed by Interstate and Foreign Commerce subcommittee
H.R. 1253	Harris	Fair Trade bill	Held up in House Rules
S. 1283	Magnuson-Bush	Hazardous substances labeling	Interstate and Foreign Commerce hearings concluded
H.R. 5260 H.R. 7352	Roberts Curtis	Hazardous substances labeling	Before Interstate and Foreign Commerce; no hearings this session
S.J. Res. 41	Hill	HEW National Advisory Council for Int'l Medical Research	Passed Senate; hearings held in House
S. 881	Morse & others	Hospitalization under social security	Before Finance; no hearings this session
H.R. 4700	Forand	Hospitalization under social security	Ways and Means postponed action until next year

S. 1960 S. 2011	Proxmire Symington	Medical prescriptions sent as 3rd and 4th class mail	Before Post Office and Civil Service
H.R. 6867 H.R. 8077	Moulder	Medical prescriptions sent as 3rd and 4th class mail	Before Post Office and Civil Service
H.R. 5393	Durham	Medical Services Corps "star' rank	Before Armed Services
H.R. 529	Karsten	Narcotics control law	Passed House; before Senate Finance
S. 1056	Murray	National health insurance	Before Interstate and Foreign Commerce
H.R. 4498 H.R. 5462	Dingell Roosevelt	National health insurance	Before Interstate and Foreign Commerce
S. 2525	Neuberger	Polio vaccine bank in PHS	Before Labor and Public Welfare
H.R. 668 H.R. 1279	Thompson	Repeal retailers excise tax on toilet preparations	Before Ways and Means
H.R. 10	Keogh–Simpson	Voluntary pension plans for self-employed	Passed House; Senate hearings concluded

Flemming Summarizes HEW Changes—With the signing of the Labor–Health, Education, and Welfare Appropriation Act by President Eisenhower for the fiscal year 1960, HEW Secretary Arthur S. Flemming summarized the program changes which can be expected in 1960. The Food and Drug Administration will be able to increase from 21,840 a year to 27,000 a year the number of plant inspections; this will increase the frequency of such inspections at plants throughout the country from one every four and one–half years to one every four years. Also the FDA will be able to increase the number of samples tested for adulteration and misbranding from 29,750 to 33,000 as a further protection of consumers against health hazards and economic cheats. In the field of radiological health, the FDA will now be able to begin the ground work for a substantial expansion of its monitoring of radiation levels in a great variety of food stuffs. The National Institutes of Health will be able to expand its own research programs and the support of medical research in other institutions.

FDA Prepares Manual for Pharmacists—Speaking at the National Pharmaceutical Council Education–Industry Forum in Princeton, N.J. (see report on pages 591–598), FDA Commissioner George P. Larrick pointed out that the National Association of Boards of Pharmacy suggested that the FDA should prepare a manual for pharmacists which would state the essential features of the requirements of the Food, Drug and Cosmetic Act with respect to retail pharmacy. Larrick then announced that such a manual has been prepared and will be issued in the near future.

Dispensing Exempt Narcotics Creates Problems—Henry L. Giordano, Deputy Commissioner of the Federal Bureau of Narcotics, speaking at the NPC Pharmacy Education–Industry Forum pointed out that the Bureau of Narcotics is deeply aware of the problems associated with the dispensing of exempt narcotics and that they are increasing their efforts in notifying the state boards of pharmacy and the state and county pharmaceutical associations of abuses coming to their attention so that they may take the necessary corrective action.

Pharmacy Today

Associations

American Association of Colleges of Pharmacy, District 3—District 3 members held their fall meeting in Gatlinburg, Tennessee, October 5 and 6 at the Riverside Hotel. The two-day meeting consisted of several speeches and panel discussions by members and attention was devoted to recruiting methods in pharmacy.

American College of Apothecaries—Miami Beach, Florida, will be the site of the 1960 meeting of the American College of Apothecaries. Set for February 14–17, 1960 the session will be under the chairmanship of *A. L. Malmo*, first president of the ACA. At the convention a new regional director will be elected to represent Canada which was named an additional region at the recent meeting of the ACA Board in Cincinnati.

American Foundation for Pharmaceutical Education—Fellowship grants to 29 universities to provide awards to 72 graduate students selected by the board of grants of the Foundation were recently distributed by the Foundation. These awards, to outstanding scholars majoring in pharmacy and closely related fields, total $130,000.

APhA President Howard C. Newton presented a scroll from APhA to Dr. Percy T. Phillips, president of the American Dental Association, at ADA's centennial convention in New York City, September 14–18. The illumined scroll read in part—"This celebration of 100 years of service to the dental profession and to the public health comes at a time when dental research has reached its greatest heights. The sustained interest with which the American Dental Association has fostered programs designed to improve dental health and the lengthening of the span of human life has won the admiration of the allied health professions, the public and the governments of the United States and foreign nations all over the world."

American Public Health Association—Leading medical and public health authorities from Denmark, England, Ghana, India, Japan, the Soviet Union, Sweden and Yugoslavia presented scientific papers at the 87th annual meeting of the American Public Health Association. The theme of the meeting was "Public Health Is One World" and was adopted to "stress the importance of public health as a spearhead for international cooperation."

American Society of Hospital Pharmacists—*Sister Mary Rebecca* O.S.B., St. Benedict's Hospital, Ogden, Utah, and *Sister Mary Junilla*, O.S.F., St. Francis Hospital, Santa Barbara, California, were awarded citations in the 1959 annual competition for historical writing in hospital pharmacy. The competition was conducted by the American Institute of the History of Pharmacy in cooperation with the committee on historical records of the American Society of Hospital Pharmacists. The awards were presented at the annual meeting of the American Society of Hospital Pharmacists by Secretary Ernst W. Stieb of the Institute. In addition the winners received an autographed copy of George Urdang's book "Pharmacy's Part in Society" and a two-year gift membership in the Institute. Just a week after the presentation Sister Mary Junilla died in Santa Barbara, California (*see page 611*).

National Association of Chain Drug Stores—*John E. McKeen*, president of Chas. Pfizer and Company, speaking at a meeting of the association, said American pharmaceutical firms will spend more than three billion dollars in the search for new drugs over the next decade if the industry's research investment continues to rise as it has in the past. *G. B. Burrus*, president of People's Drug Stores, Washington, D.C., urged executives of chain drug stores and pharmaceutical manufacturers to keep the nation's system of drug distribution abreast of the "fast moving revolution in medicine."

New Hampshire Pharmaceutical Association—The general manager of the pharmaceutical laboratories division, Schieffelin and Co., *Dr. John N. McDonnell*, spoke to members of the association at their 85th annual meeting. Dr. McDonnell discussed the balance between ethics and economics and asserted the balance could be maintained.

New Jersey Pharmaceutical Association—A state-wide educational program to combat "rheumatic diseases" which have afflicted 350,000 people in the state was launched this month in connection with the observance of National Pharmacy Week, October 4–10. Association president *Edward C. White* said: "Our pharmacists are cooperating with the New Jersey Chapter of the Arthritis and Rheumatism Foundation to intensify a state-wide program of education on rheumatic diseases to combat its severity which has afflicted one out of 20 of our citizens in New Jersey."

New York State Pharmaceutical Association—*Dr. Nicholas S. Gesoalde*, executive director of the New York State Pharmaceutical Association, has been named chairman of the pharmaceutical division of Muscular Dystrophy Associations of America, Inc. for the third successive year. The appointment was announced last month by William Mazer, president of MDAA.

NYSPhA is presently distributing two and one-half million copies of a package insert that tells why vitamins should be purchased in the retail pharmacy. The leaflets encourage customers to consult their physician and pharmacist when purchasing vitamins. The society is also sponsoring an anti-pilferage bill for the State Legislature.

Rho Chi Society—Beta Gamma Chapter of Columbia University college of pharmacy was the recipient of the National Rho Chi Chapter award at the 35th annual convention of the Rho Chi Society at Cincinnati in August. The award, a cash prize of $250, was made for the most outstanding program encouraging qualified undergraduate students to enter graduate education in the pharmaceutical sciences.

Dean E. E. Leuallen accepted the award for Beta Gamma and presented the winning report to the convention.

New officers installed for a two-year term at the close of the convention included *Dr. Louis W. Busse*, associate dean, school of pharmacy, University of Wisconsin, national vice president; *Dr. Edward J. Rowe*, college of pharmacy, Butler University, national secretary-treasurer for a second term; *Dr. R. Bachman*, college of pharmacy, University of Arkansas, and *Dr. C. Boyd Granberg*, college of pharmacy Drake University, new council members.

A NEW CONCEPT FROM MEAD JOHNSON

METRECAL*

DIETARY FOR WEIGHT CONTROL

30,000,000 Americans are overweight

These are your customers... one out of every five that come into your store... all prospects for Metrecal!

Measured calories for effective weight reduction

With Metrecal, *your customers get appetite satisfaction and optimum nutrition on 900 calories a day.* Significant, rapid weight loss with good user acceptance proven in clinical studies.

Provides minimum daily requirements of essential vitamins, minerals, protein. Satisfies the appetite, avoids the gnawing hunger problem common in low-calorie diets.

Easy to use

Each half-pound can supplies the 900-calorie daily diet. Mixes readily with water for palatable Metrecal beverage meals—may be used plain or flavored. Eliminates complex planning, counting and estimating of ordinary diets.

Heavy promotional support

Intensive direct mail and journal advertising to physicians coordinated with aggressive detailing set the stage for important initial sales and profitable repeat business.

Put Metrecal on your counter—watch it move!

Sold in the attractive 3 can "Starter-Pak" (3-day supply). Customers use a can a day—repeat business assured!

Order by the case

Four "Starter-Paks" of 3 cans each per case. Only enough to start 4 customers, or supply one for 12 days. Maximize your profit with the extra 5% case discount.

Look at your METRECAL *profit*

You get a quick **$1.75** profit on every sale of the 3 can "Starter-Pak." *And this profit is repeated every three days for every customer on the Metrecal program. Repeat sale possibilities are virtually unlimited.*

Metrecal "Starter-Pak" (3 half-pound cans)

Suggested F.T.M.	**$4.77**
Your cost (case price)	**$3.02**
Your profit per sale	**$1.75**

Order your *first case* now!

Mead Johnson
Symbol of service in medicine

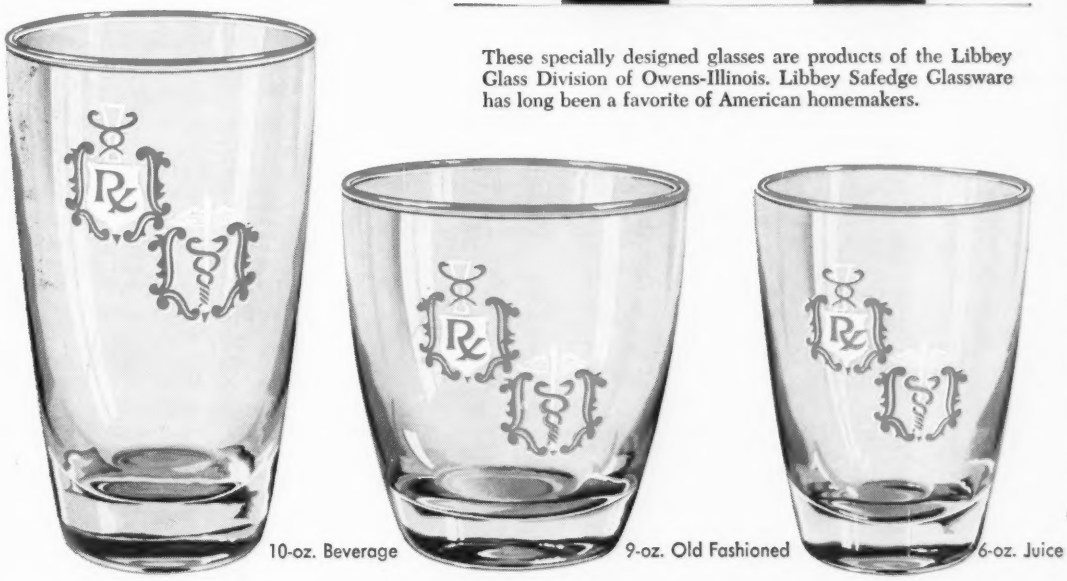
*T.M., MEAD JOHNSON & COMPANY, EVANSVILLE 21, INDIANA

82659

PROFESSIONAL CRESTWARE...

Gift Offer

These specially designed glasses are products of the Libbey Glass Division of Owens-Illinois. Libbey Safedge Glassware has long been a favorite of American homemakers.



10-oz. Beverage 9-oz. Old Fashioned 6-oz. Juice

You liked it so much in March, we're offering it again...with two more sizes

Now you can get three different sizes in the new Owens-Illinois gift offer of specially designed Libbey Safedge® Glasses.

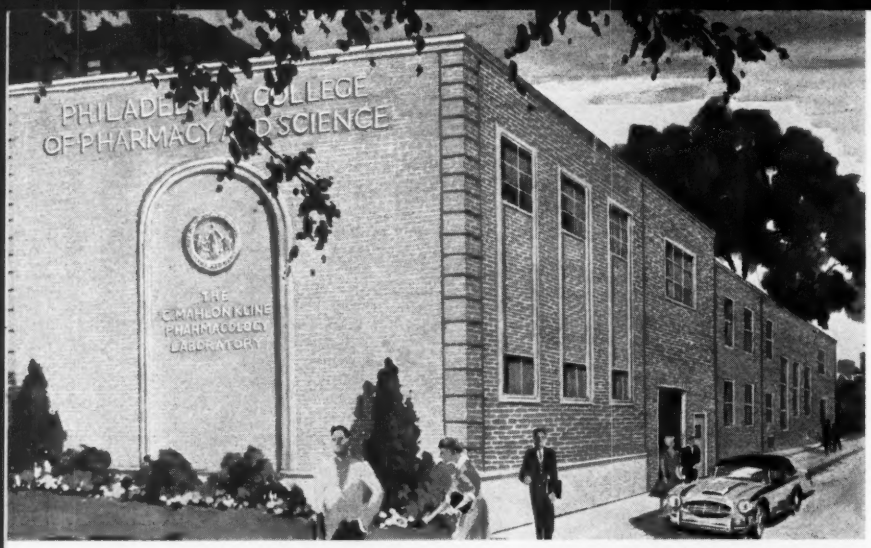
Featuring the crests of two great professions—Pharmacy and Medicine—these lovely glasses are perfect for home use or as gifts to doctor friends.

A set of eight of any of the three sizes in this Professional Crestware is yours FREE of extra cost with *each* 10-case order of Prescription Vials and/or Squares. Get all three sets by ordering 30 cases.

This gift offer is made only from September 28, through October 31, 1959. Place your order now with your Owens-Illinois wholesaler.

PRESCRIPTION CONTAINERS
AN (I) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES • TOLEDO 1, OHIO



Plans have been completed and building contracts have been awarded by the Philadelphia College of Pharmacy and Science for the construction of a pharmacology laboratory wing to be known as the C. Mahlon Kline Pharmacology Laboratory. It will adjoin the LaWall Memorial Laboratory of Pharmacology and Biochemistry. Both laboratories will be under the direction of Dr. G. Victor Rossi.

Wisconsin Pharmaceutical Association—Taking over as executive secretary of the Wisconsin Pharmaceutical Association this month is *William Allen Daniels* of Madison, Wisconsin. He succeeds *Jennings Murphy* of Milwaukee, who will continue as editor of the *Wisconsin Druggist*. A registered pharmacist and graduate of the University of Wisconsin school of pharmacy, Daniels has been consultant on pharmacy to the state department of public welfare, division of mental hygiene, served as assistant director of the University of Wisconsin extension services in pharmacy, and was hospital pharmacist at the Wisconsin Diagnostic Center.

Society of Pharmacists in Industry—*Dr. E. E. Leuallen*, dean of Columbia College of Pharmacy of the City of New York, addressed the first fall meeting of the society. Dr. Leuallen discussed Formosa and Thailand and his trip through those countries.

Colleges

Alpha Zeta Omega—*Frank T. Smith*, Philadelphia, was elected Supreme Directorum at the annual convention of the fraternity in Miami Beach, Florida. *Henry G. Seidman* of Baltimore, Maryland, was presented with the "Meritorious Award Plaque," highest award of the fraternity. *Mrs. Mintsy A. Agin*, Cleveland, Ohio, was elected national president of the Ladies Auxiliary.

Brooklyn College of Pharmacy—Four new members were recently elected to the board of trustees of the college. New trustees are *Joseph S. Lindemann*, president of the Nestle Le-Mur Company; *Frederick G. Frueh*, executive director of the Nassau-Suffolk Pharmaceutical Society; *Murray Wolkoff*, executive board member of the New York State Pharmaceutical Society; and *Morris L. Grayser*, chairman of the labor relations committee of the Consolidated Brooklyn Retail Pharmacists.

The freshman class this year contains 190 students, the largest class since the inauguration of the four-year curriculum in 1934. The new students were selected from a record number of 800 applicants.

Columbia University—Four students of Columbia's College of Pharmacy walked off with 10 of the 18 awards announced at the awards assembly on September 17. *Robert Lazar* and *Andrew C. Przybyla*, both of New York City, captured three awards each; *Milo P. Gibaldi* and *Paula Bursztyn*, both of Brooklyn, received two awards each. Other students receiving awards included *Esther Wan* of Cholon, South Viet Nam, *Donald R. Van Harken* of Bergenfield, New Jersey, *Albert De Leo* of Glen Head, New York, *Henry P. Solomon* of New York City, *Peter L. Caprioli* of Deer Park, *Morris S. Herstein*, *Norman Wasserman* and *Solomon Motola*, all of the Bronx.

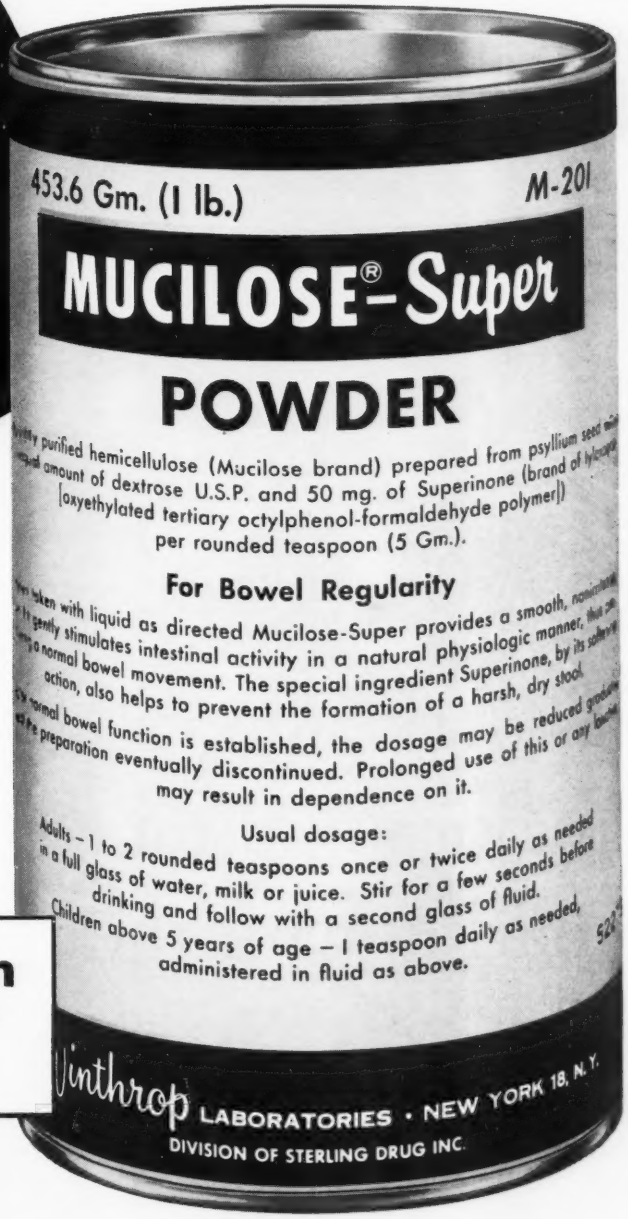
Newly elected officers of Alpha Zeta Omega are *(left to right, standing)* Chaplain Morris Shuman, Henry E. Agin, deputy, Herbert J. Pryves, *Azoan* editor, Sam Breslow, director, Benjamin Lifshutz, director, Phil Neuman, historian, Milford Harris, director, David Vogel, *Azomedic* editor, Jack Davis, director, Maher Passamaneck, insurance signare, Robert Byck, *Azomedic*, (seated) Elliot Bohrer, bellarum, Robert Kirschner, national supreme signare, Irving Goldberg, first supreme sub-directorum, Frank T. Smith, national supreme directorum, Jacob Chitlik, second supreme sub-directorum, Harold Goldfeder, national treasurer Bernard Kurlander, western bellarum, Sydney Hillman, director.

Headed for BIG demand

New

DUAL ACTION LAXATIVE

1. **Softens stool**
2. **Provides gentle bulk**


453.6 Gm. (1 lb.)
M-201
MUCILOSE®-Super
POWDER
purified hemicellulose (Mucilose brand) prepared from psyllium seed
amount of dextrose U.S.P. and 50 mg. of Superinone (brand of
[oxyethylated tertiary octylphenol-formaldehyde polymer])
per rounded teaspoon (5 Gm.).
For Bowel Regularity
taken with liquid as directed Mucilose-Super provides a smooth,
it gently stimulates intestinal activity in a natural physiologic manner,
a normal bowel movement. The special ingredient Superinone, by its
action, also helps to prevent the formation of a harsh, dry stool.
normal bowel function is established, the dosage may be reduced
preparation eventually discontinued. Prolonged use of this or any
may result in dependence on it.
Usual dosage:
Adults – 1 to 2 rounded teaspoons once or twice daily as needed
in a full glass of water, milk or juice. Stir for a few seconds before
drinking and follow with a second glass of fluid.
Children above 5 years of age – 1 teaspoon daily as needed,
administered in fluid as above.
Winthrop LABORATORIES • NEW YORK 18, N.Y.
DIVISION OF STERLING DRUG INC.

New MUCILOSE® SUPER combines the peristaltic stimulation of frequently prescribed Mucilose (bland bulk) with the stool softening action of Superinone® for gentle, more effective relief of constipation.

Big Promotion

to physicians in your pharmacy's area . . . advertising, detailing, sampling.

Big Market

through product's ability to treat effectively a broad range of constipation sufferers.

Regular Mucilose **also available in Compound Tablets, Granules, Flakes (Special Formula), Flakes (Concentrated), and Granules with Cascara.**

Stock

MUCILOSE-SUPER *NOW!*

4 oz. and 16 oz. cans

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1450 Broadway, New York 18, N. Y.

Mucilose and Superinone (brand of tyloxapol), trademarks reg. U. S. Pat. Off.

It's headed for BIG prescription and repeat business.

Lederle announces a product of major importance in the antibiotic market with the introduction of new...

DECLO

DEMETHYLCHLORTETRACYCLINE LEDERLE

a masterpiece of antibiotic design

DECLOMYCIN provides greater therapeutic activity with less antibiotic... unrelenting peak antimicrobial attack throughout therapy... plus "extra-day" activity for protection against patient relapse. Strikingly enhances the advantages of tetracycline therapy.

maximum effort promotion

An unprecedented program of advertising and detailing is committed to the support of DECLOMYCIN... equal to the magnitude of its market potential. Watch DECLOMYCIN make prescription history... and stock for immediate demand.

SUPPLIES NOW AVAILABLE FOR STOCKING!... in the distinctive dry-filled duotone capsule—150 mg., bottles of 16 and 100.

DECLOMYCIN®

Lederle

LEDERLE LABORATORIES
a Division of
AMERICAN CYANAMID COMPANY
Pearl River, New York

(Continued from page 566)

Ohio Northern University—*Dr. Charles O. Lee*, professor of pharmacy, is one of three authors of a new book, "Orientation to Pharmacy." The book is designed to be used as a text in the beginning course in pharmacy. Other authors of the book are *Dr. Henry M. Burlage*, dean and professor of pharmacy, University of Texas, and *Dr. L. Wait Rising*, professor and chairman of the department of pharmacy and pharmacy administration, University of Washington.

Philadelphia College of Pharmacy—Members of the faculty of the Philadelphia College of Pharmacy and Science are offering an entirely new series of television broadcasts in conjunction with the University of the Air. The series began September 30 and are broadcast for a half hour each Wednesday morning. General theme is *You and Your Health*. Registrar *John E. Kramer* is hosting the series.

University of Illinois—*Dr. Conrad A. Blomquist*, assistant professor of zoology of the college of pharmacy, was recently named assistant dean. The appointment was made public by Dean George L. Webster. Dr. Blomquist was acting assistant dean of the college since January.

Government

Army—*Col. James · Kidder*, MC USAR, was recently promoted to Brigadier General and is continuing to serve as special assistant for reserve affairs to the Army Surgeon General. General Kidder was dean of Fordham University's College of Pharmacy from 1932 until 1955 when he became dean emeritus. General Kidder is consulting surgeon at City Hospital and at St. Barnabas Hospital, attending surgeon at French Hospital and professor of clinical surgery at New York Medical College, all in New York City.

Smithsonian Institute—*Dr. Sami K. Hamarneh* has been named associate curator of the Division of Medical Sciences at the Smithsonian Institute. Dr. Hamarneh, who recently received his PhD degree in pharmaceutical history at the University of Wisconsin, will be in charge of the section of pharmaceutical history at the U.S. National Museum. He fills the position vacated by *George B. Griffenhagen*, now managing editor of THIS JOURNAL.

Hospital

Greater Philadelphia Hospital Pharmacists' Association—To help reverse the recent sharp increase in accidental poisoning cases in Delaware County, the Greater Philadelphia Hospital Pharmacists' Association is continuing its program of accidental poisoning prevention. In a report last month *Joseph A. Desiderio*, chairman of the poison control committee of GPHPhA, urged more care and protection of young children and an "intensified education of the older age group" to help reduce the number of poison casualties.

Industry

Abbott Laboratories—*Dr. Harold E. Zaugg* and *Dr. Frederick N. Minard* were recently named to newly created research positions in recognition of their scientific stature. Dr. Zaugg was appointed research fellow and Dr. Minard was named research associate. Chairman of the board *Elmer B. Vliet* announced the promotions last month.

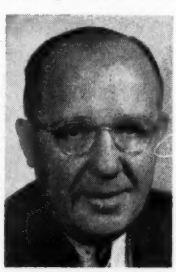
Barnes-Hind—Director of research and product development is *Dr. Joseph Z. Krezanoski*. He is the co-author of several scientific papers on potato enzymes. Dr. Krezanoski received his PhD from the University of California school of pharmacy.

Dr. R. Parker, assistant general manager of Lederle Laboratories Division, American Cyanamid Company, inspects an antique lamp presented to the company by Mrs. Scott M. Stearns, daughter of Dr. Ernst Lederle, founder of the laboratories. The lamp will become a permanent fixture in the restored farm house in Pearl River, New York where in 1906 Dr. Lederle began producing diphtheria antitoxin.

Bristol-Myers Products Division—*G. Sterling Brady* has been appointed director of market research of the Bristol-Myers Products Division, *William M. Bristol*, President announced. He succeeds *Alfred A. Whittaker* who became vice president in charge of advertising.

Burroughs Wellcome & Co.—*Charles H. Pressel*, vice president in charge of production, was elected a director of the company announced president *William N. Creasy* last month.

Eli Lilly and Company—*Oscar W. Funk* has been elected president of Eli Lilly and Company (Canada) Limited by its board of directors. He had been vice president and general manager since 1955. He is a board member of both the Canadian Foundation for the Advancement of Pharmacy and the Medical Exhibitors Association of Canada.



From Lilly headquarters in Indianapolis also comes the announcement that Eli Lilly and Company and the Syntex Corporation have signed a cooperative research agreement. Under this agreement Lilly will share the expense of Syntex research and conduct clinical investigations of promising new compounds discovered

$$$ ¢¢¢¢
$$$ ¢¢

DOLLARS—of savings on Insurance Costs

SENSE—in having strong Capital Stock Company protection

THE DRUGGISTS' OWN
Service Security Savings
THE AMERICAN DRUGGISTS' INSURANCE CO.
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INSURANCE CO.

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better safe than sorry

No doubt about it. It *is* better to be safe than sorry. **And when you prescribe Mysteclin-V, you are playing safe.** Mysteclin-V – a combined broad spectrum antibiotic/antifungal agent is specially designed to combat most of the commonly encountered pathogenic organisms[1] and, simultaneously, to protect against fungal superinfections.[2,3] With the increased use of broad spectrum antibiotics the incidence of such superinfections has risen and the danger of superinfection is especially great in pregnant patients, in diabetics, and in those who require long courses of antibiotic therapy.

Mysteclin-V controls infection and prevents superinfection – with the proved effectiveness of tetracycline phosphate complex and Mycostatin, the first safe antifungal antibiotic. Thousands of successfuly treated cases[4-6] of respiratory, urinary tract, intestinal, and miscellaneous infections attest to the safety and clinical effectiveness of Mysteclin-V. When *you* prescribe Mysteclin-V, you make a telling assault on bacterial infection and prevent fungi from gaining a foothold.

Supplied: Capsules (250 mg./250,000 u.), bottles of 16 and 100/Half-strength Capsules (125 mg./125,000 u.), bottles of 16 and 100/Suspension (125 mg./125,000 u. per 5 cc.), 2 oz. bottles/Pediatric Drops (100 mg./100,000 u. per cc.), 10 cc. dropper bottles.

'MYSTECLIN'®, 'SUMYCIN'®, AND 'MYCOSTATIN'® ARE SQUIBB TRADEMARKS

References: 1. Cronk, G.A.; Naumann, D.E., and Casson, K.: Antibiotics Annual 1957-1958, New York, Medical Encyclopedia Inc., 1958, p. 397. 2. Childs, A.J.: Brit. M.J. *1*:660 (Mar.) 1956. 3. Newcomer, V.D.; Wright, E.T., and Sternberg, T.H.: Antibiotics Annual 1954-1955, New York, Medical Encyclopedia Inc., 1955, p. 686. 4. Gimble, A.I.; Shea, J.G., and Katz, S.: Antibiotics Annual 1955-1956, New York, Medical Encyclopedia Inc., 1956, p. 676. 5. Stone, M.L., and Mersheimer, W.L.: Antibiotics Annual 1955-1956, New York, Medical Encyclopedia Inc., 1956, p. 862. 6. Campbell, E.A.: Prigot, A., and Dorsey, G.M.: Antibiotic Med. & Clin. Ther. *4*:817 (Dec.) 1957.

Mysteclin-V

SQUIBB TETRACYCLINE PHOSPHATE COMPLEX (SUMYCIN) AND NYSTATIN (MYCOSTATIN)

SQUIBB

Squibb Quality –
the Priceless Ingredient

Nine recipients of Lilly foreign educational fellowships learn about the use of electron accelerators in pharmaceutical research from S. W. Arnett, of the Lilly Research Laboratories. In front (left to right) are Drs. Azevedo, Brazil; Alexander, Bolivia; Suarez, Mexico; Griffths, England, and Rodriguez, Venezuela. Behind them are Drs. Edwards, Australia; Wilson, Scotland; Gidikel, Argentina, and Dowdle, South Africa.

in the Syntex Laboratories. Products resulting from this research will be available for marketing by both companies.

McKesson and Robbins—President *Herman C. Nolen* announced two promotions within the company last month. *James W. Seibert* was appointed vice president in charge of field buying at the New York office.

W. Ellis Minton was appointed district vice president of the Southwest Drug District.

Baxter Laboratories, Inc.—Acquisition of Flint, Eaton and Co. of Decatur, Illinois, was announced last month by *Dr. Ralph Falk*, chairman, *William B. Graham*, president, of Baxter Laboratories (*see cut*), and *C. R. Flint*, chairman, and *J. K. Flint*, president, of Flint, Eaton. The new company will operate as a division of Baxter and will bring a new group of specialty prescription pharmaceuticals to the company's product line.

William B. Graham (center), president of Baxter Laboratories, Inc., looks up after signing papers at the company's Morton Grove, Illinois headquarters that sealed the acquisition of Flint, Eaton and Company, a Decatur pharmaceutical firm. Standing beside Graham are J. K. Flint (left), president, and C. R. Flint, chairman, of Flint, Eaton.

Merck and Company, Inc.—New manager of organization and development at Merck and Company, Inc., is *Norman H. Blumberg* of Westfield, New Jersey. In this newly created position, Mr. Blumberg will advise top management on changes in the company's organizational structures necessary to improve operations and profits or meet future needs.

Parke, Davis and Company—*Barnard Thompson* has been named manager of advertising production and inventory at Parke, Davis and Company and *George J. Betzing* has been appointed supervisor of graphic arts production.

Graduate Study in Pharmacy

Young men and women from many distant States and foreign countries now gain interesting and successful careers in pharmaceutical practice and industry after M.Sc. and Ph.D. courses of study at this institution. B.Sc. program available for undergraduates. Also Schools of Chemistry, Bacteriology, and Biology. New residence hall for women. Many extracurricular activities. Founded in 1821. Write for free catalog.

Philadelphia
COLLEGE OF PHARMACY AND SCIENCE
43rd St., Woodland and Kingsessing Aves., Philadelphia 4, Penna.

Pitman-Moore Company—*Kenneth F. Valentine*, president of Pitman-Moore Company, said last month his firm will build a $1,500,000 tissue culture center at its biological laboratories. The new center will be the first of its kind in the country and will include special features based on recommendations of outstanding scientists and new requirements of the U.S. Public Health Service. Special precautions are being made to prevent cross contamination of virus.

President Valentine also announced that *Harold F. Cummings*, who has been associated with the pharmaceutical industry for nearly 30 years, joined Pitman-Moore as a vice president. Cummings who has been with Vitamerican Corporation since 1948 was the firm's vice president in charge of sales.

Schering Corporation—*Daniel N. Tousman* was appointed market research analyst in the management research department effective last month. Tousman, a graduate pharmacist from the University of Wisconsin, holds a Masters' Degree in marketing from the same university.

E. R. Squibb and Sons—*R. W. Betzing* is the new assistant merchandising manager at E. R. Squibb and Sons, *W. L. Arscott*, vice president and director of sales announced last month. Betzing is the winner of the Squibb-NARD award for exceptional services rendered to retail accounts.

In addition, *Dr. L. B. Hobson*, medical director, announced the appointment of *Dr. Charles L. Ravaris* as assistant medical director. Dr. Ravaris holds a M.D. degree from the University of British Columbia, where he also served as demonstrator in physiology.

Sterling Drug Inc.—Chairman of the board *James Hill, Jr.* announced the appointment of *Andrew P. Power* as head of the foreign law section of the legal department. Power has served in the foreign law section of Sterling's legal department since joining the company in 1952.

Chas. Pfizer & Co., Inc.—A medical motion picture (*see cut*) sponsored by Pfizer Laboratories, "Dynamics of Phagocytosis," received two awards for excellence from the Biological Photographic Association at its 29th Annual meeting in Montreal last month. The film won first prize in

SHARE IN THE CIBA "PROFIT CHAIN" THIS WINTER $$$$$

THE PROFITS YOU MAKE NOW...

up to 44% on 2 Bradosol-Privine discount deals

LINK TO MORE PROFITS LATER...

more Bradosol repeat sales because consumers now get 4 **free** Bradosol Lozenges with every package of Privine Nasal Spray or Nasal Solution

First Class
Permit No. 157
Summit, N. J.

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NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

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CIBA PHARMACEUTICAL PRODUCTS INC.

P.O. BOX 277

SUMMIT, NEW JERSEY

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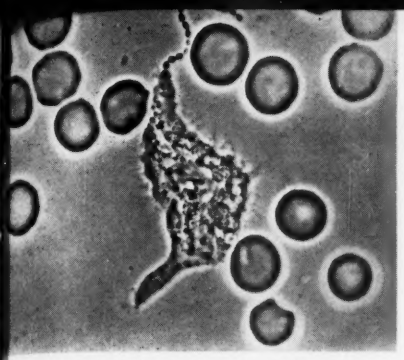


In a dramatic scene from Pfizer's award-winning film a living human blood cell is shown ingesting a chain of streptococci. Special technics such as time-lapse photography added new dimensions of information for medical education and study.

the professional teaching motion picture category and also won the BPA Medical Educational Award, presented by the association and *Post Graduate Medicine* for medical photography of superior educational value.

Vick Chemical Company—*Dr. Chester E. Poetsch*, former head of the Pharmaceutical Chemistry Section of Smith, Kline and French, became research director of Vick Divisions, Vick Chemical Company, October 1. He is vice president of research for both Vick Products Division and for Vick International Division.

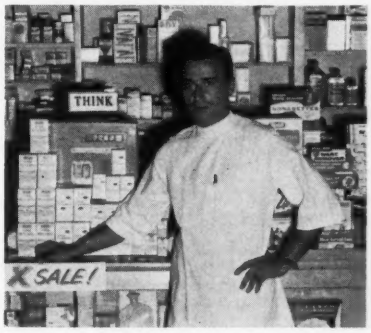
Another new vice president for Vick is *Dr. Robert T. Stormont*, former director of the department of Therapy and Research of the American Medical Association. He is responsible for providing services to Vick's operating divisions in acquiring new products, patents and product ideas from research sources throughout the world.

International

International Congress of the History of Pharmacy—*Patrick F. Belcastro*, assistant professor of pharmacy at Purdue University represented the American Pharmaceutical Association, Purdue University and the American Institute of the History of Pharmacy at the International Congress of the History of Pharmacy held in Dubrovnik, Yugoslavia, from August 26 to 31. This conference, attended by pharmacists of 20 nations, featured papers on the historical aspects of pharmacy, medicine and chemistry. Participants toured the city of Dubrovnik, visited the apothecary shop of the Franciscan Monastery (1317) and viewed a museum collection of jars, mortars and books originally belonging to the Domus Christi Pharmacy (1420). The Congress was sponsored by the International Academy of the History of Pharmacy.

Pharmacists

Nicholas Gakidis, pharmacist and pharmacy owner in Falmouth, Massachusetts, was selected to represent the United States and the Rexall Drug



and Chemical Company at the Salonica International Fair in Greece. Gakidis, son of Greek immigrants to the United States, was chosen "as a very obvious example of the American system of free enterprise—where, above all else, individual progress is fostered, encouraged—and forever expected and where opportunities abound for each and every one."

Frederick D. Lascoff, owner of the famous Lascoff Apothecary in New York City, was interviewed September 15 by Tony Gilbert on a national hook-up of the NBC radio program "Monitor." The interview consisted of a trip through the Lascoff Apothecary, describing its pharmaceutical activities and its collection of apothecary antiques and pharmaceutical library. The firm was founded 60 years ago by Dr. Lascoff's father.

J. Curtis Nottingham, of Williamsburg, Virginia, a pharmacist and

With Victor T. Clark *(far left)*, incoming president of the Virginia Pharmaceutical Association, and Glenn B. Updike *(far right)*, outgoing president, as witnesses, Jack Norton *(second from left)*, vice president of A. H. Robins Company of London, presented J. Curtis Nottingham with the Bowl of Hygeia award.

former secretary of the Virginia Pharmaceutical Association, received the A. H. Robins "Bowl of Hygeia" award for outstanding professional and community service at the recent VPA convention in Roanoke, Virginia. Nottingham was the first full-time secretary of the VPA.

Franchot Jensen, a young pharmacist two years out of college, played a key role in a nation-wide effort to save the lives of members of two families stricken with botulism poisoning in Idaho Falls, Idaho. For three hectic weeks he spent most of his waking hours on this case. There is only one antidote to botulism, an anti-toxin made only by Lederle Laboratories in limited quantities.

Jensen received a call to get a supply of the botulism antitoxin fast for members of two families who had eaten spoiled home-canned beets.

The pharmacist contacted Lederle's regional office in Portland, Oregon, from where six vials of anti-toxin were flown to Idaho Falls immediately.

Next Jensen contacted Lederle offices in Los Angeles and Denver. Lederle rushed two more shipments from its headquarters in Pearl River, New York. Doctors credited the anti-toxin—and Jensen's efforts to obtain it—with saving three lives.

A multi-million dollar center for basic and applied research has been proposed by the Colgate-Palmolive Peet Company. The firm expects to construct the laboratory near Rutgers University at New Brunswick, N.J. An architectural sketch of the new plant is shown below.

Editorial

Salute to the American Dental Association

Measured by every criteria, the Centennial Session of the American Dental Association held September 14–18, 1959, in New York City was an outstanding event. Recognition of the contributions to public health by our sister profession was made by pharmacy in the form of citation presented by Association President Howard C. Newton (*see page 563*).

Dr. Leroy E. Burney, Surgeon General of the U.S. Public Health Service, cited five areas of professional responsibility in which the American Dental Association has achieved a distinguished record:

1. Development of an educational program from the apprentice system to the professional level in the university family.
2. Establishment of an enlightened and forthright national policy on dental health programs.
3. Application of preventive principles to clinical and public health practice.
4. Continuing education of the public in dental health matters.
5. Vigorous support of scientific dental research.

The record breaking registration of 35,200 included 17,007 association members among the 19,412 dentists in attendance. Actions by ADA's House of Delegates included approval of a statement which reads: "Resolved, that the efforts of untrained and unqualified persons to gain a limited or an unqualified right to serve the public directly in the field of dental practice be opposed as detrimental to the health, safety and welfare of the public." On the basis of several recommendations emphasizing that the program could attract qualified individuals to careers in dental practice, education and research, the House also adopted a resolution urging constituent and component dental societies to step up their support of science fairs.

The report on membership and the action taken to increase dues unequivocally indicate that dentistry does not intend to rest on its past accomplishments. Membership in the ADA at the end of August, 1959 was 94,197, an increase of 3,256 over the same date a year ago. (HEW *Health Manpower Source Book* just released lists a total dental population of 99,500). This record of professional "completeness" is an accomplishment worthy of special attention and a challenge to every voluntary association.

By adopting a $10 increase in annual dues (from $20 to $30 a year), the House of Delegates provided the management of the American Dental Association dues income in 1960 estimated at $2,360,400—an increase of $805,400 over the 1959 estimate. Other income for 1960 is estimated at $988,000, coming primarily from advertising and subscriptions, earnings on investments, exhibit space rentals and sale of educational material. The total anticipated income of $3,348,400 for 1960 is expected to leave a surplus of $318,125.

In the past pharmacy has looked with envy upon the organizational requirements of medicine which have contributed so much to the strength of the American Medical Association. We suggest that dentistry offers a more logical basis for comparison. The "muscle" developed by the American Dental Association is for the most part of recent origin. Dentists in the United States can be proud of their personal acceptance of individual professional responsibility in providing the proper covering for the skeleton of their national professional society which was formed a century ago. For his brilliant leadership and devoted effort, we salute Dr. Harold Hillenbrand, secretary of the American Dental Association.

Opportunity Unlimited

It is encouraging to note the increased number of institutes, seminars and lecture series which the colleges of pharmacy have already scheduled for practicing pharmacists during the 1959–60 academic year (*see page 590*). Of particular significance is the fact that in nearly every case where a college has embarked on this activity, pharmacists have demonstrated sufficient interest to warrant continuation of the program.

While the educational institutions in pharmacy must play a vital role in any program the profession pursues to insure the continued competence of its practitioners, the colleges must not be unduly burdened with tasks which are essentially the responsibility of individual pharmacists and their professional societies.

The General Report of the Pharmaceutical Survey, 1946–49, recommended that the colleges of pharmacy recognize and assume responsibility for providing organized programs of in-service professional instruction of the practicing pharmacist. Generally speaking, the colleges have accepted this responsibility and are implementing the recommendation to the capacity of their staff and financial abilities.

The survey also recommended ". . .in order to insure the maximum of cooperative effort, that the state boards of pharmacy of each state take the initiative for the creation in the state of a pharmaceutical extension council consisting of the deans of the college(s) or school(s) of pharmacy, the director(s) of the division(s) of pharmaceutical extension, and the representatives of the state pharmaceutical association and

the state department of public instruction." There has been little progress in implementing this recommendation, and there is serious question in many minds about the assignment of this responsibility to an agency of the state.

The programs of the district meetings jointly sponsored by the National Association of Boards of Pharmacy and the American Association of Colleges of Pharmacy during the past decade indicate a serious attention to the subject of continuing education. We suggest that the enforced absence of state association representation from these discussions is a serious omission. There is good reason to believe that if state extension councils recommended by the survey are organized, state associations could not help becoming more acquainted with their responsibilities.

Organizing the council is not a particularly difficult task, but making the council effective will be a real challenge because it will involve skillful communications and the development of joint agreements about cooperative as well as unilateral activities by autonomous agencies who zealously guard their independence.

Continuing professional education is an organizational responsibility of every facet of pharmacy. We cannot afford the luxury of having its future depend on any one group. The future of continuing professional education will rest with men be they educators, board members or association officials who dare to have great expectations; and who—with the guidance and encouragement of all the pharmacists for whom they strive—will also have the courage, the persistence, the wisdom and the patience to transform those expectations into realities.

We urge our members not only to take advantage of the educational opportunities that have been announced for 1959–60 but to assist actively in the development of this important activity. A profession is judged as a profession does.

Conference on Recruitment

The lack of coordination among national agencies and professional associations working to stimulate recruitment of health personnel has in the past made for waste and unproductive competition. This problem of gaining better coordination between the national health agencies and the professional associations was tackled by the National Health Council with a Conference on Recruitment sponsored by the commission on health careers on October 2–3, 1958. So successful was this initial conference that the Second Conference on Recruitment was held in New York City on October 1–2, 1959. As a member of the National Health Council, the American Pharmaceutical Association provided the only pharmacy representation at this important meeting.

As THIS JOURNAL goes to press, we have a preliminary report on this meeting which had representatives of 45 national health agencies and professional health associations in attendance. Of particular interest to pharmacists should be the pioneering efforts of Dr. Fred C. McLaughlin, Director of the Junior Red Cross in New York City. Dr. McLaughlin has initiated a "work experience program" where this past summer more than 3,000 high school students in New York City were able to work at one of 41 hospitals in the area in the field of their choice. A number of students found a real interest in pharmacy through this program, and one of the students was on hand at the National Health Council meeting to describe his personal reactions to the program. He was 15-year-old Robert Hyndman of Manhattan, who worked for five weeks at the Metropolitan Hospital pharmacy along with six other fellow students. Robert worked a five-day-week from 9 a.m. until 4:30 p.m. in a variety of tasks. The 10th grade student has no relatives or close friends in pharmacy, and his only contact with pharmacy prior to the hospital work was an errand boy for a retail pharmacy near his home. During the brief period Robert Hyndman and a number of his fellow high school students in New York City were convinced that pharmacy was to be their choice of study and work. This is a most interesting "work experience program," we think, and deserves closer attention by pharmacists everywhere.

Pharmacy recruitment is every pharmacist's responsibility, as it is the responsibility of every member of the health professions to interest students to take up their respective profession. In a report given to the National Health Council meeting by Dr. Shailer Peterson, secretary of the American Dental Association's council on dental education, it was emphasized that 48 per cent of the dental students in school today were influenced exclusively by their family dentist to study dentistry. We suspect that this is true in pharmacy, too. Yet how many times have you overheard a practicing pharmacist answer the question, "Is your son or daughter going to be a pharmacist?" with a resounding "I hope not," or "He won't if I have anything to say about it." This is no way to encourage parents of prospective students or the students themselves to consider pharmacy as their life's work. Even when such replies are made in a joking way, they can do real harm in the over-all recruitment program. Each and every pharmacist is responsible for this recruitment in pharmacy, and if it isn't developed at a grass roots level and in the daily contact between pharmacists and their public, then pharmacy will be the loser.

In connection with these comments on the recent conference on recruitment, and the important role played by the AMERICAN PHARMACEUTICAL ASSOCIATION as representatives of pharmacy in the National Health Council, it is significant again to note that the House of Delegates adopted a resolution in Cincinnati asking APhA to centralize the planning, direction and coordination for a continuing program to publicize careers in pharmacy. A progress report on these efforts will be made as soon as the council has taken official action on the resolution. ■

In the community of today . . .

what does medical care cost?

by Jules Backman, Ph.D.

IN RECENT months there have appeared various sensational articles designed to "expose" the high cost of medical care. These charges usually are not placed within a framework of reference which would show the significance of the figures cited. Let's examine the available facts concerning the cost of medical care. What has happened to drug prices? Is the consumer spending more of his income for drug preparations? What savings in cost does the consumer experience when he buys the new miracle drugs? What is the average cost per prescription? What does the consumer get for his money?

By way of introduction, there are about 55,000 drug stores in the United States. In 1958, total sales were $6.6 billion. Somewhat more than one quarter of this volume was accounted for by prescription sales. It is this area which is subject to greatest criticism.

The relative importance of prescriptions has increased significantly. In 1939 and in 1945 expenditures for prescriptions were about one dollar out of every nine dollars in drug store sales as compared with one out of four now. The dynamic development of miracle drugs in recent years has been largely responsible for this sharp rise in the relative importance of prescriptions.

The changing nature of domestic pharmaceutical sales also may be illustrated by the shift to prescription products from proprietaries. In 1939, in terms of manufacturers' sales, the volume was equally divided between the two types. By 1946, prescription products accounted for almost two thirds of the total and by 1958 accounted for 78 per cent of the total. Despite this major shift to prescription products, the share of the consumer dollar spent for drug preparations has declined moderately during the past two decades.

Dr. Jules Backman—Nationally-known economist, author and educator, Dr. Backman is professor of economics at New York University school of commerce, accounts, and finance. Formerly an editorial writer for the *New York Times*, he is considered an authority on labor problems, prices, business economics and anti-trust problems. His career in economics began in the 1920's and has included service as consultant to many of the nation's largest corporations and industries and governmental agencies.

drug prices and inflation

During World War II and the postwar years, the general level of consumer prices has more than doubled. Sharply higher prices for food, clothing, automobiles, and other products are well known to all of us.

To what extent have prices of drug preparations contributed to this price inflation?

Since 1939, these prices have increased by less than 50 per cent. In fact, this group of products has shown one of the smallest rises in prices during these two decades of inflation. But price changes do not tell the entire story. This has been a period of rapid improvement in the quality of life-saving drugs.

It is probable that if the full impact of the price declines for the newer forms of antibiotics as well as other new products could be measured, the average rise in all drug prices would be smaller than shown by the official indexes. Typically, when volume increases the prices of these products are cut sharply. According to the U.S. Department of Commerce, "The average price [of antibiotics] has moved from $860 per pound in 1948 to a current price of around $160 per pound."[1]

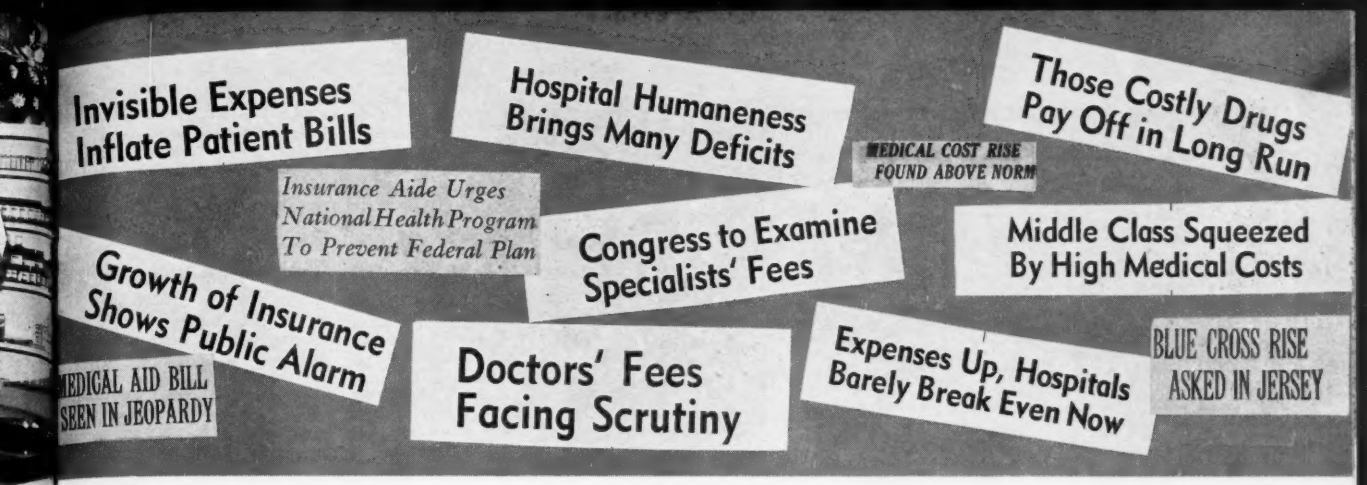
The significance to the consumer of the relatively modest rise in the prices of drug preparations may be dramati-

[1] *Survey of Current Business*, 21, (May 1959).

Per Cent Increases in Consumer Prices of Medical Care Components, 1939 and 1955 to March 1959

	1939 to March 1959	1955 to March 1959
Hospital rates	309.8	24.9
Medical care	105.0	16.3
Dentists' fees	90.3	9.3
Physician's fees	88.1	13.8
Surgeons' fees	66.3	6.9
PRESCRIPTIONS AND DRUGS	45.5	9.3
Optometric examinations and eyeglasses	43.1	7.0

Source: U.S. Bureau of Labor Statistics.


Invisible Expenses Inflate Patient Bills
Hospital Humaneness Brings Many Deficits
Those Costly Drugs Pay Off in Long Run
MEDICAL COST RISE FOUND ABOVE NORM
Insurance Aide Urges National Health Program To Prevent Federal Plan
Congress to Examine Specialists' Fees
Middle Class Squeezed By High Medical Costs
Growth of Insurance Shows Public Alarm
MEDICAL AID BILL SEEN IN JEOPARDY
Doctors' Fees Facing Scrutiny
Expenses Up, Hospitals Barely Break Even Now
BLUE CROSS RISE ASKED IN JERSEY

cally illustrated in one figure. *If drug prices had risen as much as other prices since 1939, it would cost the consumer at least an additional billion dollars to buy the drug preparations now consumed.*

The prices of drugs and pharmaceuticals have risen much less than the other elements of medical care whether the comparison is confined to recent years or covers longer periods of time.

Chart on the cover showing the Expended Family Dollar is prepared from the information provided by the U.S. Department of Labor, Bureau of Labor Statistics in the July, 1959 issue of the *Monthly Labor Review*. The statistics show the relative importance of the Consumer Price Index components as of December, 1958. Under the component headed "Medical Care," prescriptions and drugs account for only 0.9 per cent of the 5.4 per cent for total "Medical Care."

One of the major factors pushing up the cost of medical care has been the sharp rise in hospital rates which have increased 309.8 per cent since 1939. To state it differently, the five-dollar-room now costs more than $20. Physicians' fees have risen an average of 88.1 per cent. In contrast, the costs of prescriptions and drugs have increased only 45.5 per cent.

A similar disparity emerges for the period since 1955. Hospital rates have risen by 24.9 per cent, physicians' fees by 13.8 per cent, and prescriptions and drugs by 9.3 per cent.

Clearly, total medical costs have risen sharply, as have other costs. But it is a gross distortion of fact to attribute this rise primarily to higher prices for drugs and pharmaceutical products. Some increases in these prices unavoidably have taken place. But by any available measure they have been much smaller than the price inflation which has characterized the American economy.

consumer spending for drug products

It is sometimes suggested that while prices of drug products have not risen much, the cost to the consumer has risen substantially because he now must buy much more expensive drug products. Today's new products often are more expensive than the simple remedies available in the past. But has this meant a heavy burden on the consumer? One way to measure this burden is to examine the *relative* share of the consumer dollar which is now spent for medical care and for drug products as compared with pre-World War II. Such a comparison can be made on the basis of data reported by the U.S. Department of Commerce.

In 1958, the American consumer spent $16.4 billion for medical care. This spending covered the costs of doctors, dentists, other professional advice, hospitalization, drugs, and insurance. Of the total, $3.3 billion was spent for drug preparations and sundries. In other words, the consumer spends for drug preparations only one dollar out of every fiive dollars spent for medical care.

Since 1939, the total cost of medical care has risen more than consumer incomes. Out of every dollar of income left after taxes, the consumer spent four cents for medical care in 1939 and 5.2 cents in 1958. However, throughout the same period, he spent one cent or less out of these income dollars for drug preparations.

It is interesting to note that the one cent per dollar of after-tax income spent for drug preparations compared with 2.9 cents spent for alcoholic beverages and two cents for tobacco products in 1958. The combined spending of 4.9 cents for alcoholic beverages and tobacco was about the same as the 5.2 cents spent for all medical care.

In terms of actual dollars spent, the average for every man, woman, and child—per capita expenditures—was $18.74 for drug preparations, $36.64 for tobacco products, $52.93 for alcoholic beverages, and $94.16 for all medical care.

The per capita estimate has more meaning for drugs than for tobacco and alcoholic beverages because *all* members of the population, from the cradle to the grave, require drug products, while children do not use tobacco or alcoholic beverages. Thus, if the comparison were based on actual users, the disparity would be even wider than shown. The amount spent per capita for drugs was also less than the total of $24.45 spent for personal care (toilet articles, barber and beauty shops).

It is also instructive to examine how the consumer spends his medical dollar and the changes which have occurred during the war and post-war years.

The share of the medical care dollar spent for drug preparations was moderately *lower* in 1958 than in 1939 despite the major developments in the form of the so-called miracle drugs. Thus, in-

Cents Per Dollar of Disposable Income Spent For:

	All Medical Care	*Drug Preparations and Sundries*
1939	4.0	0.9
1948	4.1	0.8
1950	4.2	0.8
1955	4.6	0.9
1958	5.2	1.0

Source: U.S. Department of Commerce

Per Capita Expenditures — 1958

TOBACCO and ALCOHOL	PERSONAL CARE	DRUGS
$89.57	$24.45	$18.74

clusive of the spending for all of the new drug products, the consumer spends about one-fifth of his medical dollar for drug preparations. These figures also highlight the dramatic rise in hospitalization costs which accounted for 26.4 cents of the medical care dollar in 1958 as compared with only 17.3 cents in 1939.

Composition of Medical Care Dollar

	1939
Hospitalization	17.3
Physicians	30.4
DRUG PREPARATIONS	21.5
Dentists	13.6
Insurance	5.4
Ophthalmic & Orthopedic	6.0
Other Professional Services	5.8
Total	100.0

Total personal consumption expenditures increased from $67.6 billion in 1939 to $293.0 billion in 1958, a rise of 333 per cent. During this same period, total spending for medical care increased from $2.8 billion to $16.4 billion, or by 48.6 per cent; expenditures for drug preparations and sundries increased 43.3 per cent.

The sharper rise in expenditures for medical care as compared with the total for consumer expenditures for all goods and services may be attributed to several factors. Important among these factors is a growing awareness on the part of the public of the value of good medical care. Second, there is greater ability to pay for medical care in the prosperous 1950's than in depressed 1939. Thirdly, an increasing proportion of the population is now more than 65 years of age and we have a longer life span. Fourth, there has been a greater availability of many medical services. Fifth, there has been a tremendous growth of various insurance plans such as Blue Cross and Blue Shield. In general, expenditures for medical care and drugs follow trends in income level and respond to changes in the social climate and economic activity.

The U.S. Department of Labor estimated that "... changes during the last two decades in the quantity and quality of medical care received by workers' families ... have been almost as great as the price changes." In other words, the American public is now buying considerably more medical care—both in terms of quality and quantity—than it bought formerly.

The American consumer recognizes that he receives today a greater variety of services of a superior quality than he did in years gone by. Many drug items today offer treatment or cure for diseases for which there was little or no relief previously. Accordingly, consumers have been insistent that new drug products be made available promptly.

Lucy Kramer of the U.S. Public Health Service has pointed out in this connection:

> "Miracle' drugs have lowered national death rates and sharply reduced acute communicable diseases.
>
> "Since the introduction of sulfa drugs in 1937 deaths from influenza-pneumonia have decreased 75 per cent, from 114.9 per 100,000 in 1937 to 27.1 per 100,000 in 1955. The principal diseases of childhood—scarlet fever, streptococcal sore throat, diphtheria, whooping cough, measles—which caused 10 deaths per 100,000 children in 1945, in the space of only 10 years dropped to 1 death per 100,000, a decrease of 90 percent. According to unpublished data of the National Office of Vital Statistics, the mortality from all infectious diseases dropped in 50 years from 676.2 per 100,000 in 1900 to 44.3 per 100,000 in 1956."[1]

Miss Kramer also pointed out the manner in which new drugs may result in a significant saving in other medical costs.

> "According to one source, 20 years ago a case of lobar pneumonia meant 5 weeks in a hospital, long convalescence and $300 to $400 for doctors, nurses, medicines, oxygen, and hospital care. Today, it means 2 weeks of illness, generally at home, back to work immediately thereafter, and $15 to $30 for drugs.
>
> "Thirty years ago the treatment of mastoiditis cost at least $1,000, required surgery, and involved the possibility of permanent impairment of hearing. Today $15 worth of antibiotics clears up most cases without surgery."[2]

The illustrations Miss Kramer cites could be multiplied many times, but one other illustration will suffice—the sharp reduction in tuberculosis since the development of streptomycin. A number of TB hospitals and sanitoriums have closed their doors because of the effective treatment of this once-dreaded disease by a life-saving drug. How can we measure the reduction in cost of treatments, to say nothing of the other costs, as against the price of streptomycin?

These benefits have been obtained at an increase in drug expenditures as compared with 1939 equal to one-tenth of one per cent of consumers' after-tax income.

cost per prescription

The figures cited indicate that changes in prices have been more modest than for the balance of the economy and that there has been no significant change in the share of the consumer's dollar spent for drug preparations despite the in-

[1] Kramer, Lucy M., "Drugs and Medicines," *Public Health Reports*, p. 929 (October 1958)
[2] *Ibid.*, pp. 936–37

Composition of Medical Care Dollar — 1958

HOSPITALS	PHYSICIANS	DRUGS	DENTISTS	INSURANCE	OTHER
26.4	23.8	19.9	10.2	8.3	11.4

crease in the quantity and quality of the products acquired. Nevertheless, there has been widespread criticism that drug prices are "much too high."

Many of the newer drug products are more costly than those formerly prescribed but, of course, the price paid is only one ingredient in the cost of medical care. As was noted earlier, the use of the newer drug preparations often makes it unnecessary to incur costly hospital bills. However, expenditures for drugs usually are made in brief periods of time—when the illness occurs—unlike other types of purchases which may be spread throughout the year. Thus, there is a greater tendency to focus attention on concentrated expenditures for medical care than upon aggregate expenditures for other products dispersed.

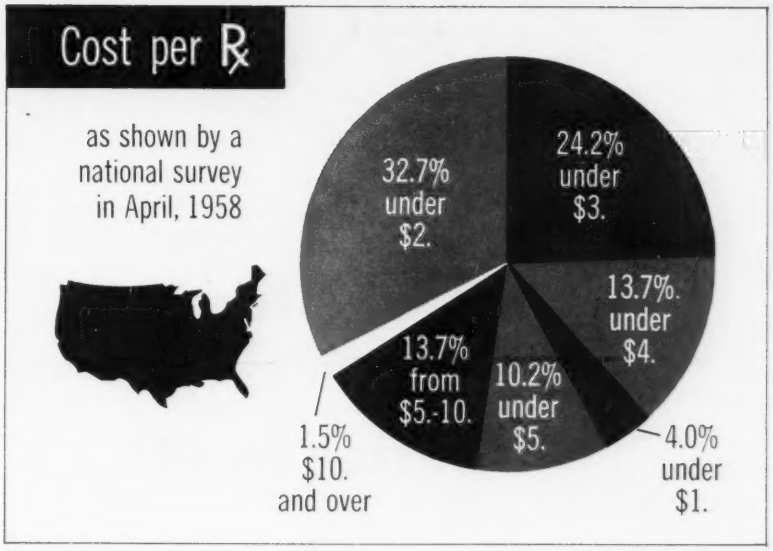
Nevertheless, various studies have shown that the price of the average prescription is relatively modest.

In general, these surveys show that between one-third and two-fifths of the prescriptions cost two dollars or less and about one-fourth cost between two and three dollars. About one or two per cent cost $10 or more. Unfortunately, when the consumer must buy one or more prescriptions in the $10 range, particularly at a time of mounting medical costs, he focuses his resentment against those purchases.

This resentment may be intensified when a patient suffers from a chronic illness which requires steady medication. And the resentment is not lessened because the patient is kept alive and may have a sharply reduced cost for hospitalization.

Complaints about high prices are not unique to drug preparations. Prices of coffee, fruits, heating oil, and many other products have been subjected to considerable criticism by consumers in recent years, and complaints about the high cost of living have been made frequently during the past two decades.

Druggists handle some items which are much higher in cost than the average. He also sells many prescriptions at a much lower price. While these facts may provide no consolation to the consumer who must buy the higher-priced item, it is probable that at some time he also acquires lower-priced prescriptions so that the two balance out. Moreover, we often forget that the one higher-priced prescription may take the place of several lower cost items formerly prescribed—and that we may buy fewer refills of these higher-priced items because of their more effective therapeutic value.



what the consumer gets for his dollar

What does the consumer get for his average prescription cost of slightly less than three dollars? First, he obtains the drug product he wants when and where he needs it because his druggist carries it in inventory. Second, he obtains the best products available from a research-minded pharmaceutical industry. Third, he obtains the professional skill of the druggist whenever a prescription must be prepared. Fourth, a part of his dollar is used for research which has led to more potent drugs today than were available yesterday. In 1958, about $170 million was spent for research and development by the drug manufacturers. This was equal to about seven per cent of the industry's sales. The manufacturer receives about 50 to 55 per cent of the consumer's dollar, part of which is plowed back into the search for more effective drug products. For some products part of the difference between the retail price and the manufacturer's price is paid for the service of wholesalers.

We have reaped a rich harvest from these research dollars. According to one estimate, 3,657 new drug products were introduced in the ten-year period 1949 to 1958. In addition, 1,150 new dosage forms were made available. Many of these new products replaced, partially or fully, existing products. Thus, a new oral anti-diabetic drug was a substitute for insulin. On the other hand, products such as steroids, Salk vaccine and broad spectrum antibiotics were entirely new and marked major advances in the attack upon illness.

Developments have taken place rapidly. Many of the early miracle drugs have been either replaced or supplemented by new products. Cortisone, for example, has been replaced by related synthetic derivatives. Penicillin has been supplemented and partly displaced by the broad spectrum antibiotics. And a similar picture is found in connection with other products.

Many products we take for granted today are of recent origin as the following incomplete list illustrates:

1937	Sulfa drugs
1940	Penicillin
1946	Streptomycin
1947	Antihistamines
1950	Cortisone, Aureomycin, Chloromycetin, and Terramycin
1955	Salk vaccine

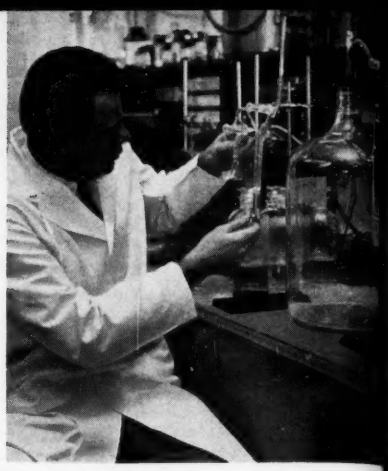
Most of the leading drug manufacturers report that 50 per cent to 80 per cent of their current sales are derived from new products developed in the last ten years. This is a dramatic illustration for the dynamic progress in the attack on ill-health. Improved products have meant more rapid recoveries, less time spent in the hospital (a decrease from an average of 9.1 days in 1946 to 7.7 days in 1956), and less working time lost due to ill-health.

summary and conclusion

It is clear from this brief review of the trends of drug prices and expenditures for medical care and drug preparations that some instances of higher prices have been dramatized out of all relationship to their importance. The consumer today acquires larger amounts and more effective drug preparations than ever before. He has increased expenditures for drugs from nine-tenths of one cent per dollar of after-tax income to one cent—a modest change indeed. Moreover, too little attention is given to what the consumer saves in other medical expenses when he buys the new higher priced drugs with their greater therapeutic value. ■

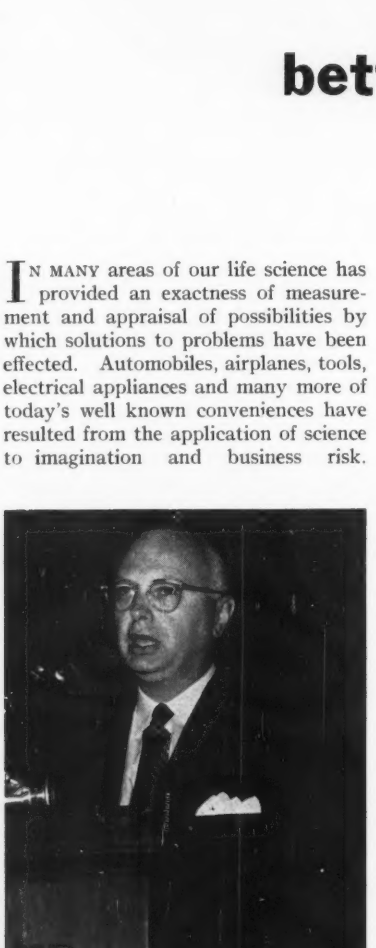
In the community of today . . .

science works for better health



by Austin Smith, M.D.

IN MANY areas of our life science has provided an exactness of measurement and appraisal of possibilities by which solutions to problems have been effected. Automobiles, airplanes, tools, electrical appliances and many more of today's well known conveniences have resulted from the application of science to imagination and business risk.



Dr. Austin Smith—In the medical field, Dr. Smith's career has ranged from editorship of medical journals to his present post as president of the Pharmaceutical Manufacturers Association and Health News Institute. It has included being executive editor of the *World Medical Journal*, editor and managing publisher of the *Journal of the American Medical Association*, editor-in-chief and managing publisher of AMA's scientific publications. In addition Dr. Smith is now council emissary forthe World Medical Association and chairman of the board of directors of the U.S. committee of the World Medical Association.

Much of the same philosophy is apparent in the advances that have been made over the control of ill health. In fact, this philosophy has become so widely accepted that many people now regard illness as an irritation—or as a source of complaint in conversation—rather than as a serious challenge, except, of course, those confronted with major or lasting illness. But what are some of the facts concerning the health picture? Do they reflect the application of science to community health?

Well, one could paint in one part of the picture a group of cancer patients—200,000 of them in the United States. Or in another corner 800,000 people in this country with arthritis. In another corner could be placed 750,000 people under the age of 50 years with heart disease, 20,000 of these being new patients each year and between the ages of five years and 24 years. Perhaps a fourth corner might reveal 500,000 people in the U.S.A. with tuberculosis. In between the corners could be shown 260,000 people with total blindness; 50,000 people with diabetes newly discovered each year; 25–30 per cent of the population with overweight problems; and a frightening number of people with mental illness and problems associated with the nervous system. Only a few disease areas have been mentioned; there are many others.

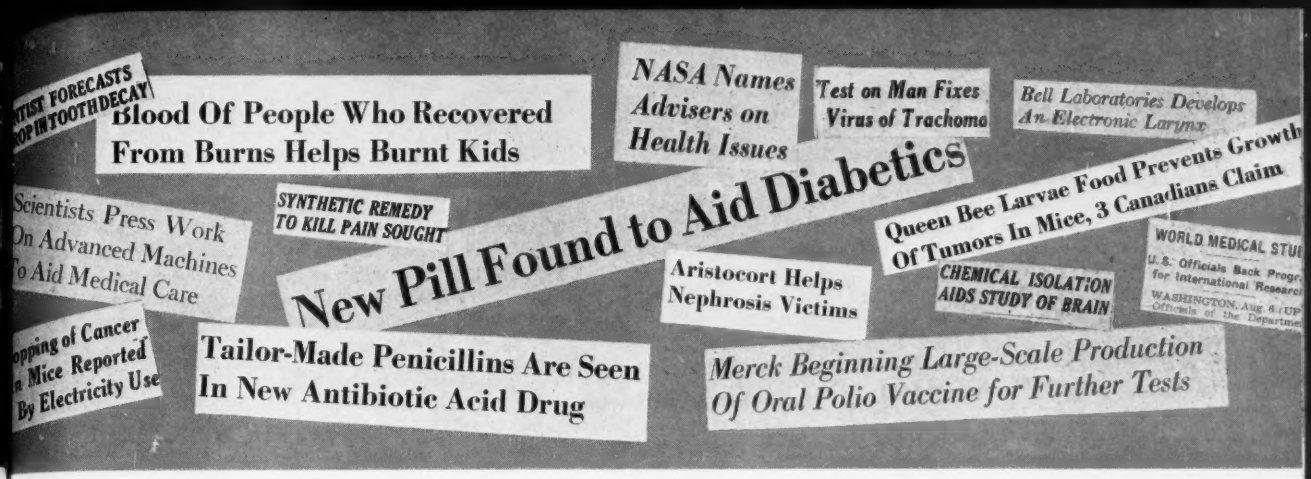
Perhaps another way of focusing attention on today's health problems is by referring to hospital occupancy in the U.S.A. In 1958 there were 23,697,000 hospital admissions, 700,000 more than in 1957. Each day there are 1,300,000 patients in hospitals and 48,000 newborn babies.

The above information was obtained by studying 6,786 hospitals surveyed by the American Hospital Association. The total expense for these hospitals amounted to $7,133,493,000 of which $4,660,191,000 was for payroll. In 1958 the hospitals employed 1,464,829 personnel, an average of 111 personnel per 100 patients. This was four more per 100 than in 1957.

The average patient stay in the so-called short-term hospitals was 7.4 days, each of these days requiring an average expenditure of $29.24 per patient, an increase of $2.43 per patient per day over 1957. Patients in voluntary short-term hospitals paid an average of $1.28 a day less than it cost to care for them. Total income from the patients was $3,277,242,000, while expenses were $3,426,520,000. In psychiatric hospitals, the average expenditure per day ranged from $4.11 in state and local governmental psychiatric hospitals, through $10.61 for federal psychiatric hospitals and $16.35 in voluntary psychiatric hospitals to $17.66 in the proprietary psychiatric hospitals.

More than half of all U.S. hospitals are voluntary hospitals operated not for profit by churches and non-profit associations, 15 per cent are proprietary and 33 per cent by agencies of federal, state or local government.

In vew of the diseases yet to be controlled and the astronomical number of hospital patients, plus the many who remain at home when ill, one is entitled to wonder what the future holds. Life expectancy for man in prehistoric times was 18 years; during the Roman Empire heyday, 20–30 years; in the middle ages, 33 years; when the U.S. was


Blood Of People Who Recovered From Burns Helps Burnt Kids
NASA Names Advisers on Health Issues
Test on Man Fixes Virus of Trachoma
Bell Laboratories Develops An Electronic Larynx
Scientists Press Work On Advanced Machines To Aid Medical Care
SYNTHETIC REMEDY TO KILL PAIN SOUGHT
New Pill Found to Aid Diabetics
Queen Bee Larvae Food Prevents Growth Of Tumors In Mice, 3 Canadians Claim
Aristocort Helps Nephrosis Victims
CHEMICAL ISOLATION AIDS STUDY OF BRAIN
Tailor-Made Penicillins Are Seen In New Antibiotic Acid Drug
Merck Beginning Large-Scale Production Of Oral Polio Vaccine for Further Tests

founded, 35 years; at the beginning of the twentieth century, 49 years; and today, almost 70 years.

This indeed is encouraging. And the end is not in sight. The importance of good housing, proper sanitation, swift transportation, modern surgical technics, chemotherapy and other influencing factors is well known to all. But what about the status of some members of the health team?

health team status

In 1958 more than 277,000 professional nurses worked full time in hospitals; of these 236,000 were hospital employees, and 41,000 private duty nurses. In addition, almost 65,000 professional nurses served in hospitals on a part-time basis. In May, 1959 there were 239,124 physicians in this country; of these, 161,692 were in the practice of medicine. In 1957, there were 110,688 pharmacists in the U.S.A.; of these, 100,195 were in retail stores and 3,711 were in hospital pharmacies. In 1958 there were 38,211 medical technologists working in hospitals. In addition to the hospital coverage available there are 300 or more clinics that serve the sick. Also, the U.S. drug industry now makes available each year drugs worth two billion dollars and this figure will increase to four and one-half billion dollars within 10 years to meet the needs.

Why should I mention such statistics? After all, someone has said, "If all statisticians were laid end to end they would never reach a conclusion," to which another self-styled wit replied "Just lay them end to end and never mind the conclusions."

Today's statisticians and economists hold the crystal balls for a glimpse of tomorrow. They, too, are a part of research and already have been very helpful to members of the health team. The above data only emphasizes the breadth and depth of today's responsibilities when we try to face squarely our obligations for the control of illness.

Maybe another way to emphasize what this means is to ask "How much value can we place on 3,200,000 American lives?" These are the lives saved by the overall decline in the death rate from 1937 to 1955 (a reduction of 18 per cent), which can be attributed, according to an authority in this field, "in large part to the chemical revolution in medicine."

Not long ago a nationally known pediatrician compared our health today with that in the space age, 40 years hence. To make the comparison even more dramatic, he referred to our health 40 years ago. This physician claimed a prophet in 1919 would have taxed the credulity of a young physician by saying:

"If you are still practicing in 1959—

"You will not have seen a clinical case of diphtheria or tetanus for 25 years.

"A suitable formula for 99 out of 100 babies will be obtainable at any drug store.

"Rickets, scurvy and infantile tetany will be textbook diseases that you will have rarely, if ever, seen in private practice.

"It will be at least 15 years since you have seen a patient with surgical mastoiditis.

"Most cases of pneumonia and scarlet fever will be treated in your office and will be essentially cured in 24 hours.

"Very few babies will die of diarrhea because of what you have learned about electrolyte and water metabolism."

To a large extent what the 1919 prophet might have predicted has come true for most U.S. physicians. Between new health concepts, new diagnostic measures, new drugs and other aids, the medical picture changed tremendously during the 40-year period prior to 1959.

medical look to future

But what about 1999? The same prophet might predict, according to our pediatrician, for the U.S. physician the following:

"Cancer and leukemia will have been relegated to medical history.

"The common cold will have been forgotten.

"Babies will rarely be born prematurely.

"A single explanation and method of control will have been found for allergy.

"A single injection or tablet will immunize children against all of the communicable diseases.

"Many congenital defects will be avoided by a better understanding of genetics.

"Such metabolic diseases as diabetes, arthritis and cystic fibrosis will be easily controlled by improved knowledge of the enzyme system."

I am sure this prophet to a large extent would be right. In fact, he could predict much more because scientists already have caused a social revolution greater than the industrial revolution which indicates how far science has progressed. And it is just at the beginning.

The future offers much if we can judge from the past—deaths have been decreased by 75 per cent and deaths from diphtheria, whooping cough and scarlet fever have been decreased by 90 per cent. As another example of what is occurring, consider the tuberculosis sanitaria that have been closed in this country. Perhaps another way of focusing attention on the health changes is by referring to the fact that medical problems are becoming more prominent in the field of old age than in that of infections.

Centuries ago doctors in Babylon paid damages when their cures failed. In Persia the doctor whose patient died under his care risked being killed. Medical textbooks in the middle ages advised collecting at least part of the fees while the patient was in fear of death. And Josia Bartlett, the second signer of the Declaration of Independence, achieved fame by treating fever cases with cider. About as useless was the way the Romans treated alcoholics by putting a live eel in the drinker's cup. A treatment for asthma in Wisconsin consisted of smoking a crushed wasp's nest, and in Latin America one breathed into the mouth of a live fish. For coughs in some areas a frog was nailed to the door and a cockroach was put in a jar under the bed. A not unpopular treatment for grippe in the South was for the sufferer to hang his hat on a bedpost and drink whisky until he could see two hats. No doubt these beliefs were known by—and were worrisome to—the person who wrote to his physician:

"Dear Sir: For services rendered please send me your lowest bill. This will be advantageous to both of us especially you. This way when I don't pay it, you won't lose so much."

I have examined newspapers to observe how frequently there was reference to some phase of health. Accidents, new drugs, hospital problems, and government activities are only a few of the topics mentioned. In one paper an advertisement for a barber shop read—

"We have nothing that will grow hair. We do, however, have a solution that will shrink the head so the hair you have will cover it."

There seems to be no lack of interest in health by the public. Obviously, the reporting of medical progress has stimulated this interest. But, unfortunately, at the same time misunderstanding has arisen. Too many miracles are expected. Too few pause to realize that when a doctor saves the life of a child from pneumonia he may be preparing a candidate for heart disease or cancer, problems generally associated with the older part of the population. When the drug manufacturer discovers a new drug he may be precipitating problems through no fault of his own if unexpected reactions to the drug occur.

research progress

When the public becomes enthusiastic about new cures and cries out for more and more research and politicians with an ear tuned to votes respond by pouring unexpendable sums of money into research, there will be created a situation that is detrimental to orderly research progress. When new medical miracles are publicized the public may clamor for them before they are ready for use. And as insurance plans for illness are broadened, are hospitals and health personnel ready for them?

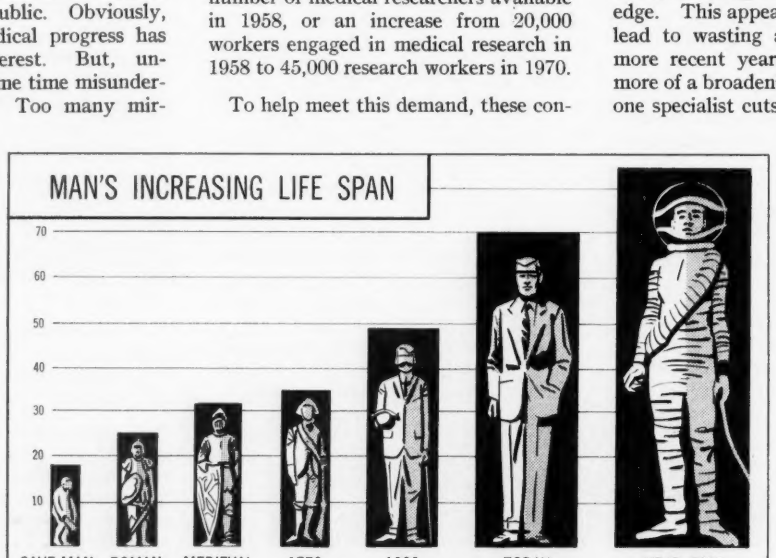
I can point with more specificity to the breadth of the problems created by growth and progress by referring to just one phase of the future. The figures that follow represent the thinking of at least some students in this field and, right or wrong, are indicative of what lies ahead.

A special group of consultants appointed by the Secretary of Health, Education and Welfare concluded that by 1970 there would be national expenditures for medical research of $900,000,000 to one billion per year, divided equally between federal and non-federal sources. They also concluded that utilization of this money would depend on doubling by 1970 the number of medical researchers available in 1958, or an increase from 20,000 workers engaged in medical research in 1958 to 45,000 research workers in 1970.

To help meet this demand, these consultants insisted, an additional 6,000 physicians, or others with doctoral degrees, would be needed in addition to the supply already projected from the growing medical schools. Subsequently, others decided this money might be available before 1970 and therefore the extra researchers would be needed before 1970, perhaps by three to five years earlier. More than half would be at the doctoral level.

On all sides of us today are heard cries of shortages of scientific and professional manpower. Perhaps the insurgence of interest in Russia's scientific attainments has increased the comment but I think it was inevitable. Politics and public interest, as well as public needs, would have evoked such comment. However, we are living in such an explosive age that bewilderment and failure to understand give rise to confusion and lack of appreciation of what has been done, is being done and can be done. Maybe it's because the scientists, the professional people and, in general, business people prefer to get on with their work without their time and efforts being diluted by having to prepare long explanations, perhaps even long reports. The time is here, though, for all of us to state our cases and to plan for the future.

The cases we can state are based on past experience and present performance. To both we can point with pride. However, they were based in part at least on the utilization of talent that by tradition, and probably experience influenced by tradition, was assigned to certain tasks. Scientists too often have been confined to fields that by tradition seemed applicable to their degrees, and not often enough to their areas of knowledge. This appears to me as if it might lead to wasting ability or talent. In more recent years one sees more and more of a broadening of interests so that one specialist cuts across other fields of



research effort, but there still is too much evidence of myopic vision when men and women are sought for scientific or other work. Too often they are labelled by their academic background rather than by their possibilities.

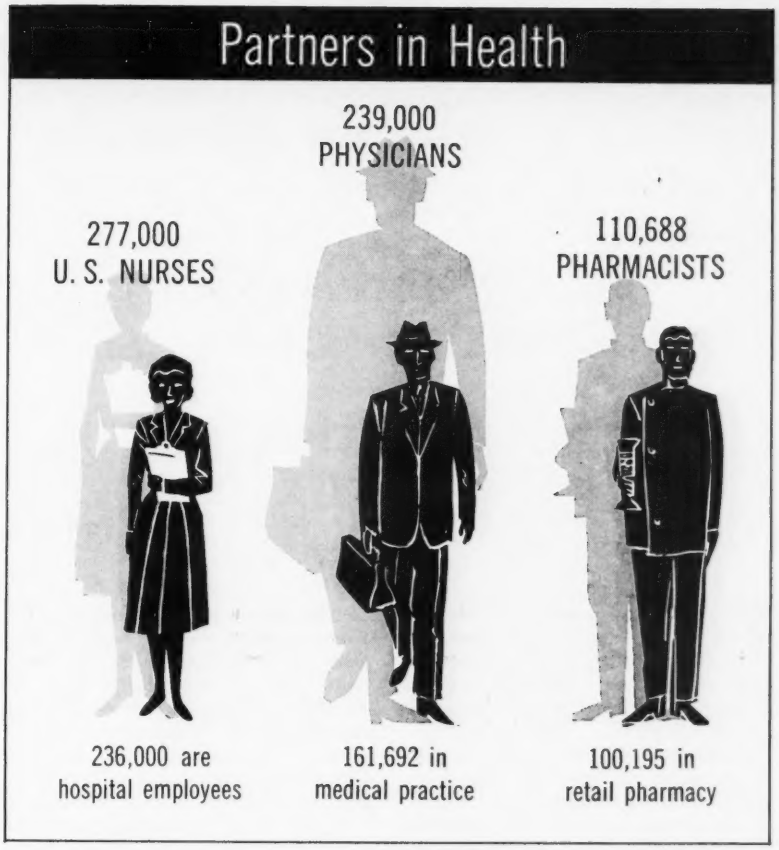
Now and then it is best to pause long enough to realign our sights on our objectives. So it is for professional people. Should we not pause now and then long enough to ask ourselves, "What do we need," rather than "How can we adapt this man to our needs?" Maybe it appears impractical to be more concerned with what we need than with the hours and years declared necessary for any degree. But impractical or not, I believe it is time for each profession to review very carefully its role in society, its obligations, its opportunities, and what it has to offer to would-be graduates.

Isn't it time for each of us to ask himself these questions—"Where do I fit in this pattern of life?" "Where should I fit in?" "What should I do to be placed there?" I don't know, for example, how pharmacy may best serve but I am convinced it is not only in the preparation and dispensing of prescriptions. The role of pharmacists already has spread into other areas—administrative, business and scientific. So it is with medicine. So it may be for other groups. Who knows where the paths to be explored will lead?

Perhaps some of the paths will lead directly to the problems associated with community health since medical patterns are changing. These new patterns depend, of course, on new discoveries and their application, on critical appraisal and communication, and on understanding and tolerance. There must be an awareness of the importance of what's new and a realization of what remains to be done.

Too often we hear of the dramatic and too seldom of the less spectacular. For example, we read frequently of radiation and eugenics but not often about accidents following the use of someone's left-over prescription. And we hear about new chemicals for cancer but not often about how diseases carried by ticks can be controlled.

It seems to me, then, that it's up to you and me and our colleagues to take care of the drudgery. We have to worry about application of the unexciting as well as interpret the significance of the dramatic. We have to worry about details when others think of headlines. But when it's all over there will be the satisfaction that for a professional person is a type of compensation that can stem only from dedication, something predominantly evident in professional life.



future in drugs

As the future unfolds, drugs will be developed for problems not now under control. For example, the degenerative diseases will be subjected to as great a research onslaught as the infectious diseases. As the population ages degenerative changes develop. But not to be forgotten is the fact that one does not have to be old to reveal signs of degenerative change. Unfortunately, we do not have yet tests adequate to disclose some of the degeneration that may occur even early in life.

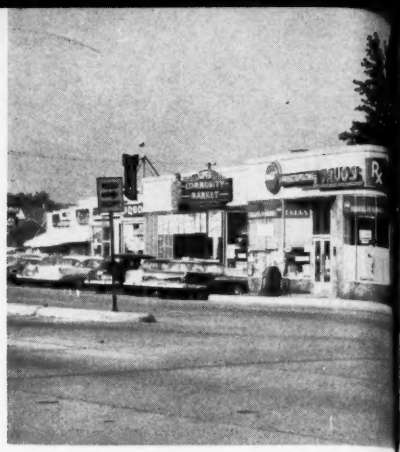
In addition, prevention as well as correction of disease processes will increase even to the extent of trying to prevent disease from the time the child is in the uterus. In fact, some believe the attack against disease can begin even before conception takes place. These, and other factors, will be related to better diagnostic tools, more daring surgery, more comprehensive insurance coverage, radically redesigned buildings for research and for medical care, and reorientation of the relationships of various groups associated with the health of the community.

So far I have pointed only to a few of the changing trends in the medical picture confronting a community. Space precludes more than this. But I have tried to emphasize that changes are occurring without pause and to imply that better community health is a science to which professional people must make special contributions. I have also tried to suggest that the breadth and depth of this problem offers opportunities not yet generally appreciated and to show that when new problems confront one member of the health team they affect other members. Each of us should keep an open eye and ear for new challenges, new solutions to health problems, and especially for problems of mutual interest to the several team members. When these become evident, no time should be lost in studying them, sharing them, and doing something about them. All will benefit.

Research is defined as "diligent inquiry or examination in seeking facts or principles; laborious or continued search after truth." A profession is defined as "a calling superior to a mere trade or handicraft." And a teacher is someone who guides, studies or imparts knowledge. On the basis of these definitions there must be a little of all three in each member of the health team. But, then, why shouldn't this be so? After all, you and I are members of service organizations, not for cars, or boats, or kitchens, but for mankind. ■

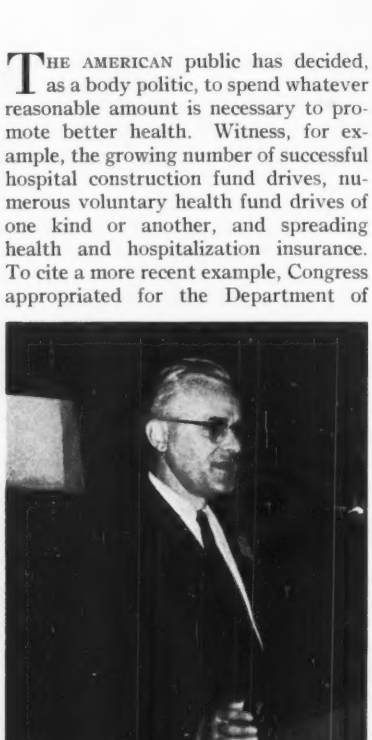
In the community of today . . .

people demand good health facilities



by Earl L. Butz

THE AMERICAN public has decided, as a body politic, to spend whatever reasonable amount is necessary to promote better health. Witness, for example, the growing number of successful hospital construction fund drives, numerous voluntary health fund drives of one kind or another, and spreading health and hospitalization insurance. To cite a more recent example, Congress appropriated for the Department of Health, Education and Welfare in the current year some $259 million more than had been requested by the President. Aside from $44.25 million in aid to federally-impacted school districts, and $25 million in federal aid for construction of waste treatment facilities, the entire increase was in funds for health activities of various kinds. Congress did not do this because it liked the Department of Health, Education and Welfare more than other departments of government. It did it because those members who voted for such increases felt they were reflecting a genuine concern of their constituents for better health for all our people.



Dr. Earl L. Butz—From the time of his birth on a general livestock farm in Indiana, Dr. Butz, dean of agriculture of Purdue University has been connected with some phase of agriculture and its economics. He served for three years as assistant secretary of agriculture and as a member of the board of directors of the Commodity Credit Corporation. His work at Purdue University has covered a span of 22 years and included every post from instructor in agricultural economics to dean. A frequent speaker throughout the U.S., Dr. Butz has found time to travel studying food and agricultural conditions in 25 countries in Europe, Orient, Near East and South America.

The question therefore is no longer whether we can afford good public health, in rural communities as well as urban. Politically speaking, we have decided that as a community we *can* afford good health facilities, and we're going to have them. The unresolved question is which route do we take to get them?

the 'do-it-yourself' age

The average American likes to do many things for himself. He has a great deal of personal independence built into his philosophy. He takes much pride in the gadgets he makes and the things he accomplishes in his leisure hours.

This characteristic in all of us is exploited by the large variety of "Do-It-Yourself" kits available in our hardware stores, hobby shops, building supply houses, drug stores, grocery stores, and even women's dress shops.

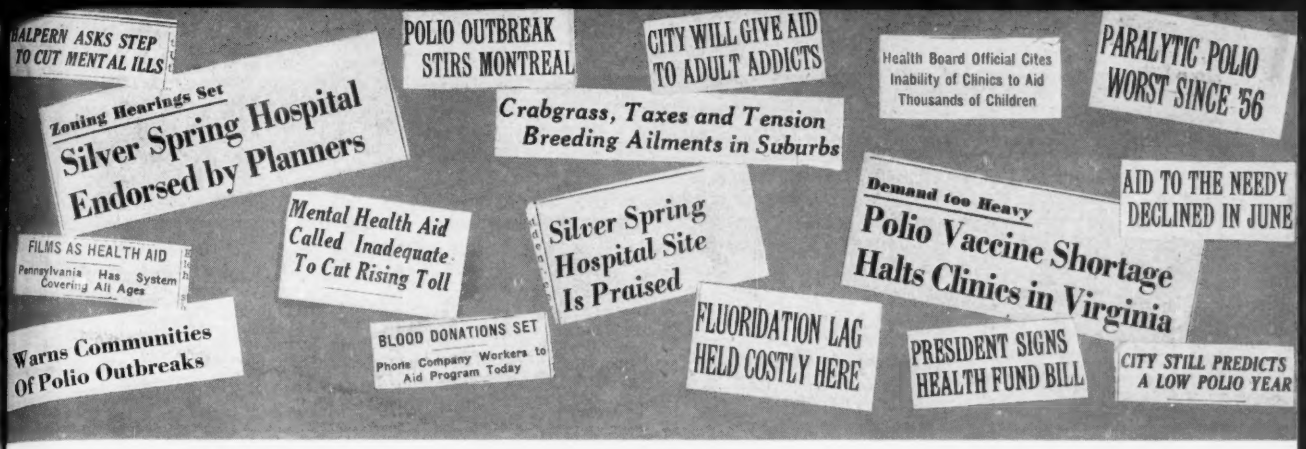
Drive through any suburban development on a holiday or Saturday afternoon and see the number of families doing their own painting, house alterations, landscaping and even plumbing. While the motivation for this may be partly one of economy, it is also partly one of pride in self-accomplishment.

It is predicted that the "Do-It-Yourself" market for tools, supplies, and gadgets will increase in the years ahead, as people continue to do things for themselves in their growing "off work" hours.

Unfortunately, there are other major areas in which the trend is away from the "Do-It-Yourself" philosophy. There has been for some years a widespread and growing disposition to look to the federal government to "do it for us" in matters of social welfare. Problems of individual and community health that once were solved on a local basis are increasingly being shifted to state and national levels.

There has been a creeping philosophy over the past several decades that seems to say, "No need to be too concerned about my social security and welfare because Washington will take care of those things for me." Many of us bask in the blind security of a benevolent federal government. "Washington will take care of us" seems to be the watchword of growing numbers of people.

Perhaps the reason we take pride in fixing up our own house on Saturday afternoon is that no vote-thirsty politician has yet promised free paint and repairs for all home-owners at federal expense. If some irreponsible candidate were to make such a promise, he no doubt would attract a large following. His constituents would be pleased until they discovered that the repairs, the paint, and the workmanship must conform to rigid specifications designed for the whole nation rather than the community, that they would be saddled with frequent and non-sympathetic in-


HALPERN ASKS STEP TO CUT MENTAL ILLS
POLIO OUTBREAK STIRS MONTREAL
CITY WILL GIVE AID TO ADULT ADDICTS
Health Board Official Cites Inability of Clinics to Aid Thousands of Children
PARALYTIC POLIO WORST SINCE '56
Zoning Hearings Set
Silver Spring Hospital Endorsed by Planners
Crabgrass, Taxes and Tension Breeding Ailments in Suburbs
AID TO THE NEEDY DECLINED IN JUNE
Demand too Heavy
Polio Vaccine Shortage Halts Clinics in Virginia
FILMS AS HEALTH AID
Pennsylvania Has System Covering All Ages
Mental Health Aid Called Inadequate To Cut Rising Toll
Silver Spring Hospital Site Is Praised
Warns Communities Of Polio Outbreaks
BLOOD DONATIONS SET
Phone Company Workers to Aid Program Today
FLUORIDATION LAG HELD COSTLY HERE
PRESIDENT SIGNS HEALTH FUND BILL
CITY STILL PREDICTS A LOW POLIO YEAR

spection, and that they would be subject to the interminable delays and red tape inherent in central and absentee administration. And when Mr. Homeowner gets his tax bill a few months later, if the cost of such service could be listed separately, he would be in for a real shock. About that time he would long for the good old days when he and his neighbors "did it themselves."

A close parallel exists in the case of socialized health services. A generation ago nearly all of our health facilities and services were provided on a local community basis. Sometimes service was inadequate to be sure. But this is no reason to throw the system overboard. It is better to plug the inadequacies and strengthen our community programs for health and social welfare.

aggressive action is needed

It is a law of physics that pressure moves into a vacuum. In political science, it is axiomatic that government moves into a void.

If those services which a community decides it must have are not provided by local people and local organizations, they will be provided by government.

It is inherent in the very nature of government to grow. Whenever large numbers of people ask for special services, politicians always try to provide them. Our people and our local organizations must be aggressive in promotion of health programs at the local level, if they want to keep these services in their own hands. These programs must have the full cooperation of the medical profession and medical organizations in providing hospital and medical services at reasonable cost and with convenient accessibility.

We must not neglect our rural health facilities in such programs. We must recognize that our rural communities have changed in the last couple of decades. The city limit sign doesn't mean the same thing it did just a generation ago. It's now just a tax boundary. We have the same living standards on both sides of that city limit sign. Indeed, growing numbers of families living on the country side of the city limit sign really aren't farm people. They are urban families who have migrated to the country, with employment roots still in the city. These people, along with the farm residents in rural communities, now demand the same standard of health facilities as do purely urban people.

communities mobilize for health

Alert communities are mobilizing to meet their health and sanitation problems head on, with local leadership, sympathetic administration, and minimum cost.

Many rural communities are making a complete inventory of their people, where they live, age distribution, income situation, and other factors necessary for the development of a health and sanitation program geared to community needs. Following this kind of inventory, it is possible to engage in intelligent community action programs of environmental health, including such things as water supply, waste disposal, garbage, milk supply, and insect control.

A community thus mobilized will be able to provide its own health and sanitation program better and more economically than one which sits back and "waits for Washington to do it."

On the other side of the coin, some people are not "sitting back and waiting for Washington to do it." They are actively pushing Washington deeper and deeper into the field of medical care.

Powerful forces have been working to push the mammoth social security program into a broad and bitterly controversial new field—medical care. In this way it may be possible to accomplish by indirection what the socialized medicine boys failed to do in a direct frontal attack a few years ago.

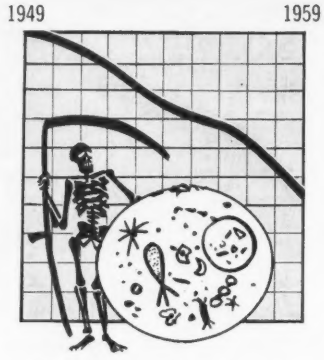
It has been reported from Washington that early in the present Congress, "liberal" lawmakers, with powerful labor support, were backing a bill that would give social security beneficiaries up to 60 days of annual free hospital care and up to 120 days of nursing care, as well as paying certain surgical costs. Under the proposed legislation, this would include more than 12.5 million people now covered by Social Security, including not only retired workers more than 65 but people continuing to work past that age plus widows and other members of deceased workers' families. Although no one just knows what this would cost, estimates put it around one billion dollars the first year and far more in later years. An additional new boost in social security taxes would be needed to finance it.

While no one can argue the need somehow to provide adequate hospitalization and medical services for our older people, the case still remains to be made that it must be done by the federal government.

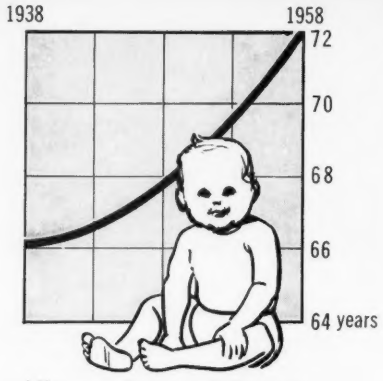
The difficulty with the government undertaking a scheme like this is that there's no stopping point. Once such a system is started, political pressures inevitably force broadening of the base upon which benefits are extended. Eligibility age limits are lowered time and again, additional vocational groups taken in, and ultimately extensive physical facilities are provided by the federal government.

At about this stage, the plan fails to be self-financing, even with free supervision. This is already happening to the broad social security program. In 1957, for the first time since social security payments began, tax revenues failed to cover benefit payments. The fund dropped back about $125 million that year. In 1958, it dropped back another $700 to $800 million. Tax increases on social security voted last year will help reverse this trend, but will not eliminate it. The 1959 deficit was only around $600 million. Calculations based on the present Social Security tax rate indicate that from 1960 on, the fund is expected to operate in the black. However, if the history

Pharmaceutical Research and Development Pays Off



Mortality rates of 8 major infectious diseases reduced 56%



Life span increased 6 years

Average hospital stay reduced 5.7 days

of governmental welfare schemes means anything, we can expect further liberalization of benefits and repeated raids on the balance in the fund.

we'll pay for it ourselves

There are substantial numbers of our people who don't really want their health facilities and services provided at federal cost. They are willing to pay for them, provided they can be convinced that they're getting their money's worth. This is the place where the medical and the pharmaceutical industries have been falling down. They have not gotten through to the people with the fascinating story of how research has revolutionized the health and pharmaceutical fields in the last couple of decades.

When this story is understood, and one matches the effectiveness of our modern wonder drugs against their cost, he soon becomes aware that he's getting a much greater bargain than ever before in our history.

The pharmaceutical industry has a tremendous story to tell. Modern drugs have been a substantial factor in slashing mortality rates of eight major infectious diseases by some 56 per cent in ten years. They have helped add more than six years to the American life span in the last two decades. Although modern drugs are more expensive per prescription than some years ago, and this primarily because they have so much expensive research and development back of them, they still have helped reduce medical expenses by making possible rapid cures outside the hospital and by substantially reducing the length of hospitalization per patient. The average hospital stay in this country was 13.8 days in 1938, and 20 years later was 8.1 days—a reduction of over two-fifths.

Statements like the above can be made about the pharmaceutical industry only because you have plowed so much back into research and development. Your industry spent about $170 million on research last year and has earmarked $190 million for research projects this year. On top of that, it has given better than seven million dollars in grants, contributions, and gifts to schools, hospitals or organizations supporting medical and related schools. Last year you plowed back into research about 7.5 per cent of your gross sales dollar. This is about eight times as great as the average of all industry in America.

Research in the pharmaceutical field is expensive. Man-hours for scientific research in any field come high. It has been estimated that for each scientist of PhD training or its equivalent in the pharmaceutical industry, with necessary technical help, laboratory animals, equipment, supplies and administrative services, total costs may run as high as $50,000 per year per man.

Make no apology for this expense. Point out the results. Pharmaceutical research is productive. Look at all the new wonder drugs which have hit the market in the last ten years—yes, even the last five years. The other day the president of a leading pharmaceutical manufacturer stated that in the human health field, two-thirds of all his sales last year were products that did not exist ten years ago, and 40 per cent of all sales were products that did not exist five years ago. This particular company invests eight cents of every gross sales dollar in research and development. It pays off, not alone for that company, but for the improved health of our entire community.

Your industry also needs to make the point that research of this kind is conceived, initiated, executed, and paid for by private enterprise, working under the American profit system. This kind of research is a very essential component of the total research complex in this country, both public and private.

research pays off in the american economic system

All of us, both as private citizens and as business executives, need constantly to remind our public that our mid-twentieth century civilization really rests on research.

Our broad program of research and education, operating through the American economic and political system, has brought living standards for all of our people unparalleled in any other country on the face of the earth. One need only go abroad for a short time to any part of the globe to see convincing proof that this is true.

With only seven per cent of the world's population, we have about half of the world's automobiles, half of the world's electric power production, more than half of the world's telephones, two-fifths of the world's steel production capacity, a proportion of our young people in high schools and colleges that far outstrips any other nation, more than 98 per cent of our farms electrified, radios, TV's, refrigerators, deep freezes commonplace in nearly all of our homes, new home construction passing the one million mark again this year, every community busy with construction of new schools, new churches, and new business buildings, and a food produc-

tion and processing industry so efficient that our growing population is one of the best fed on the earth, and yet we have sufficient food surpluses for substantial distribution overseas.

Truly this is convincing evidence that "The Great American Dream" of yesterday is constantly translated into better living today.

The economic growth of our nation over the past couple of decades has been truly phenomenal. Our economy has doubled in size in less than 20 years. Reliable predictions are that it will double again in the next 20 years. Real income per person in America has increased by about 50 per cent in the last 20 years. Indications are that this likewise will increase about 50 per cent in the next 20 years. This is a phenomenal rate of increase in the economic well-being of our nation.

If you think for a moment that our people aren't 50 per cent better off, on the average, than they were 20 years ago, just drive 100 miles down any road in your home state and look at the new homes, new factories, new schools, new hospitals, new highways, families with two automobiles, TV antennas, larger share of youngsters in college, new churches going up all over the place, vast amounts of money spent for vacations and recreation, and a score of other evidences of economic well-being.

Economic growth of this magnitude can be accomplished only on the solid foundation of research and innovation.

research—gateway to the future

It is sometimes said that this is the age of science and technology, based on research. The frontiers of the mind have replaced the frontiers of geography. A thrilling experience awaits every citizen in this great land who has the capacity and the imagination to "dream constructively."

From another point of view, it can be effectively argued that we are not yet in the age of science and technology. Rather, we merely stand on the threshold of this new age.

The important scientific discoveries which we take for granted today are really so recent, viewed against the long backdrop of the history of man, that they occurred only yesterday.

A simple illustration will prove the point. This is the age of speed, ranging from high-powered motorboats on our lakes to 18,000-mile-per-hour satellites soaring around the earth. Man has always tried to travel fast, but through nearly all of the 6,000 years of his recorded history on this earth he could travel no faster than a horse could carry him. This was about 30 miles an hour. This was top speed in Samson's day, in Caesar's day, as well as on the night when Paul Revere rode from the North Church to Concord. It was not until the 1830's with the invention of the locomotive, that man freed himself from the speed limitations of the horse. On that date he pierced the "oat barrier." How long ago was that?

Let's condense the 6,000 years of the written history of man into the 40-year productive span of an ordinary lifetime. Just ten months ago the locomotive was born.

In the mid-nineteenth century the reaper and the steel moldboard plow made it possible for midwestern farmers to begin to apply mechanization to agriculture. This was eight months ago.

About 1890 the first automobile appeared on the scene. This increased our rate of travel up to perhaps 40 miles per hour. This was six months ago.

In 1908 the Wright Brothers had their first airplane flight. They achieved a speed of 60 miles per hour. This was four months ago.

In the 1920's tractors began to appear in some quantity on Indiana farms. This was three months ago. In 1940 the DC-3 was a marvelously speedy means of transportation. It went 170 miles per hour. This was six weeks ago.

In 1945 the nuclear age was born. This was four and one-half weeks ago.

In 1948 the DC-6 was a pretty fast means of transportation, going up to as high as 280 miles per hour. This was four weeks ago.

In 1956 Air Force fliers pierced the sonic barrier. This was really traveling This was one week ago.

In 1958 Sputnik was launched, the Explorers I and II began circling around the earth at the phenomenal speed of 18,000 miles per hour. This was day before yesterday.

If you were to plot these rates of speed on a graph, the line would continue near the bottom for many, many centuries, rising slowly near the right edge, and in the last little while rising very rapidly. The line would be going up as a geometric progression. It would resemble the rate of bacterial growth under favorable circumstances. Or as somebody has said, the latter stages of that curve would look like the national debt.

In any event, a curve of this character would be convincing evidence that we are just entering the age of science. We are just beginning to scratch the scientific frontier. This is a frontier that has no effective limit. It is limited only by the mind and the imagination of man. Its horizons are vertical—not horizontal.

The research scientists in our pharmaceutical laboratories as well as in all of our scientific laboratories will have a lot to do with shaping our future. Research people everywhere recognize that the job ahead will require the hardest kind of work. The easy questions have already been answered. Many of yesterday's research problems have been solved by relatively simple, straightforward, and fairly obvious methods. Those that face us today are highly complex. We must continually search for new tools with sharper cutting edges, more potent materials, and new ways of using them if we are to get the job done.

Organized and imaginative research is the vehicle which will push the scientific frontier beyond limits we scarcely dare dream of today. It follows logically, therefore, that if we can keep our economy free and preserve an environment in which individual producers and scientists are free to dream a little about new techniques and new ideas and to enjoy the fruits of their dreams, we shall experience phenomenal progress in the next generation. ■

House of Delegates to Meet in Washington, D.C.

The interim meeting of the American Pharmaceutical Association's House of Delegates will be held in Washington, D.C., on March 27 and 28, 1960 at the Statler Hilton Hotel, according to J. Warren Lansdowne, chairman of the House of Delegates.

Sessions are scheduled to begin at 11 a.m. on Sunday, March 27, and adjourn at 5 p.m. on Monday, March 28.

Following the two-day get-together delegates may attend the decennial United States Pharmacopeial Convention at the Statler Hilton Hotel, Tuesday and Wednesday, March 29 and 30. A preliminary U.S.P. conference has been scheduled for Monday evening, March 28.

Dr. William S. Apple, APhA's secretary and general manager, expects an unusually large attendance at the 1960 interim meeting of the House of Delegates. There are 175 delegates to the House of Delegates, but all APhA members are invited to attend and participate in the discussions. Hotel reservation forms will be furnished to all delegates and further announcements about the meeting will be carried in THIS JOURNAL.

Seminars bring pharmacists up-to-date on new advances

Post-graduate courses in pharmacy and related subjects, of interest to pharmacists, are being presented by many schools of pharmacy throughout the country as part of a program of continuing education for pharmacists.

The recent advances in pharmaceutical science have brought about a quest for knowledge by the pharmacists and institutions of higher learning have been quick to bridge the chasm between the pharmacy school and professional practice, after being out of school for many years. The courses offer practical value and provide pharmacists with the latest information on recent developments in the profession.

Many universities offer post-graduate seminars, institutes and short courses throughout the year. Some schools offering courses during the next few months are:

Brooklyn College of Pharmacy: A non-credit survey course in pharmacology covering eight weeks from October 7–November 23 is offered by this school. Important developments in pharmacology will be discussed.

Fordham University: A six-week course in business law and professional law as they pertain to pharmacists. The course began on September 23 and ends on October 28.

University of Georgia: The Second Annual Hospital Pharmacy Seminar will be held October 31 and November 1 at the University of Georgia Center for Continuing Education in Athens. Outstanding speakers include ASHP President Vernon Trygstad and NPC's William Woods.

University of Illinois: The third series of Lectures on Modern Pharmacy will be held at the Allerton Estate near Monticello, Illinois, November 4 and 5. The program will include lectures on early signs and recognition of cancer, the pharmacology of tranquilizer drugs, recent advances in the use of suspension media, recent changes in pharmacy law and some experiences in narcotic law enforcement.

University of Iowa: A two-day seminar on various subjects of interest to everyone connected with and interested in the profession of pharmacy will be held on November 20 and 21.

University of Nebraska: A three-day seminar covering subjects of interest to pharmacists will be held on the campus October 29–31. The seminar is sponsored by the College of Pharmacy in cooperation with the state and local pharmaceutical associations.

University of Texas: The Eighth Annual Post-Graduate Pharmacy Refresher Course will be held on the university campus in Austin on November 13. George Griffenhagen, director of communications of APhA, will be among the guest speakers.

University of Wisconsin: A three-day institute will be held November 12–14. APhA Secretary William S. Apple, speaking on "The Role of the Hospital Pharmacist in the Profession," will head the program list at the Institute. ■

Pan American Seminar Postponed

In accordance with the resolution adopted at the Fourth Pan American Congress on Pharmacy and Biochemistry, the Pan American Pharmaceutical and Biochemical Federation, through its committee on pharmaceutical education, initiated plans for holding a seminar on pharmaceutical education in San Juan, Puerto Rico, October 11–16, 1959.

Following the announcement of this seminar and distribution of a promotional brochure, considerable enthusiasm from all quarters has been received. However, at a meeting of the committee held during the 106th convention of the AMERICAN PHARMACEUTICAL ASSOCIATION in Cincinnati, Ohio, August 16–21 it was noted that with less than two months until the seminar is due to convene few reservations promising assured attendance have been received and many expressions concerning difficulties in attendance have been voiced.

Therefore, after careful deliberation and with a full realization of the importance of this meeting for all pharmaceutical educators throughout the Americas, it has been decided to postpone the seminar until a time nearer the Fifth Pan American Congress on Pharmacy and Biochemistry. It is hoped that a time just preceding the Fifth Pan American Congress on Pharmacy and Biochemistry scheduled to be held in Santiago, Chile, November 13–19, 1960 will insure better attendance at both the seminar and the fifth congress.

In postponing this seminar, the federation wishes to express its gratitude to the officers of the federation, member associations and their constituents, members of the committee on pharmaceutical education, the local committee in Puerto Rico, representatives of the government of the Commonwealth of Puerto Rico, members of the U.S. pharmaceutical industry who have made contributions, officials of the Organization of American States, the Pan American Sanitary Bureau, the U.S. Department of Health, Education, and Welfare, the U.S. Department of State, and all of those friends of pharmacy in the western hemisphere for their support. We look forward to their continuing assistance in further developing this seminar.

An announcement will be made in the near future regarding the site and date of the seminar. ■

At pharmacy forum

educators hear industry's story

More than 150 leaders in the fields of pharmacy, education and medicine attended a Pharmacy Education-Industry Forum at the Princeton Inn, Princeton, New Jersey, August 23 to 27.

The Forum was sponsored by the 21 member companies of the National Pharmaceutical Council and marked the first time the Council presented a forum for pharmacy educators. Representatives from all of the nation's 76 colleges of pharmacy participated in the lecture-discussion program which provided pharmacy teachers with a glimpse of the workings and philosophies of the pharmaceutical industry.

The interdependence and need for "greater cooperation among the members of our nation's health team" was stressed by Dr. Theodore G. Klumpp, president of Winthrop Laboratories, at the opening session of the forum. Klumpp said "a changing world has brought great changes in the practice and teaching of pharmacy, as it has in medical science and in drug making."

New Jersey Governor Robert B. Meyner welcomed the forum participants in behalf of his state and praised the pharmaceutical industry for its record of accomplishments.

The inner workings of the "American Health Team" were discussed by Nelson M. Gampfer, chairman of the board, Wm. S. Merrell Co. He said, "we must have a distinct picture in mind of the orbits and functions of the components of the health team, and how these components relate themselves to each other and what each contributes to the public . . . through five cardinal functions of the health team—ministrative, distributive, productive, creative and educative."

The search towards research and the future was discussed by American Medical Association President Louis M. Orr who said "research is the gateway to tomorrow, and the direction of our search for ever-better health for mankind leads through that gateway. . ."

The role of *Pharmacopeia* as industry's servant and master was described by Lloyd C. Miller, director of revision, *United States Pharmacopeia*. "The importance of the *U.S.P.* to the pharmaceutical industry is so obvious that it is often cited and always taken for granted. There are times, however, when importance and value are hard to relate to utility," he said. Miller asked industry to cite *U.S.P.* or *N.F.* when the drug has *U.S.P.* or *National Formulary* status, not just when there seems to be a special reason for doing so. "I should like to see the 1960 U.S.P. Convention consider whether pharmacy and the public would not benefit from having an official standard of strength whenever practicable for the official dosage forms."

Clarence H. Faust, president of the Fund for the Advancement of Education of the Ford Foundation, spoke on "Changing Patterns in Higher Education." In discussing the dangers of the American education system and the work being carried on by educators to correct the mistakes, he pointed out that "our danger has been, and is, not that American higher education would yield to an 'ivory tower' conception of its function but rather that it would yield or drift into a 'filling station' concept of its role."

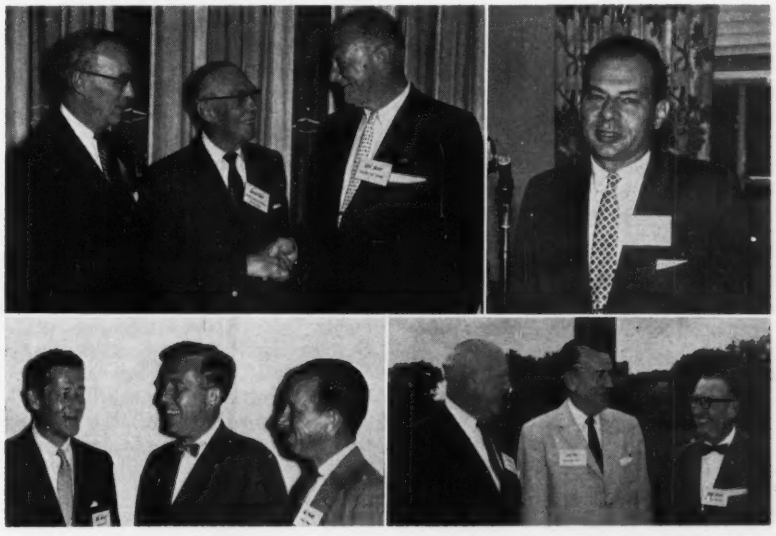
"Influence of Various Health Plans" was the topic assigned to E. J. Carroll, director of economic research, Merck, Sharp and Dome. Carroll spoke about "the extension of health plans at a time when we will be making great strides in the professions and the industry will help cushion the added expenditures which will be necessary for an increasing standard of health care." He concluded that "the insured will enjoy more health care and his life span will be lengthened through the use of health plans. The chances of socialization will be diminished and we will be in a better position to make more fully available to the consumer advantages emanating from our competitive free enterprise."

The head of the general law department of the Upjohn Company, Robert H. Hosick, discussed governmental agencies and their relation to the pharmaceutical industry. He stressed that "improvement in manufacturing standards comes from two basic sources. One is a voluntary desire by legitimate producers continually to upgrade the quality of their goods. The other is federal and state legislation setting minimum standards."

The industry's legal position in regards to trade-marks and patents was described by Raymond D. McMurray, general counsel of Hoffman-LaRoche. McMurray said "the pharmaceutical patent is the basis of competition in our industry and it is because of this competition, engendered by our patent system and nurtured by our trade-mark rights, that we have been able to maintain a foremost position throughout the world. Our competition is our source of strength."

On the following pages résumés of seven of the papers presented at the forum are given. ■

Clarence H. Faust receives congratulations from Carl K. Raiser, NPC president, as Newell Stewart, executive vice president of NPC, watches *(top left)*; Henry L. Giordano, deputy commissioner of the Federal Bureau of Narcotics gives a luncheon address; *(top right)*; keynote speaker Dr. Theodore G. Klumpp, Governor Robert B. Meyner of New Jersey and Harold G. Hewitt, chairman of the executive committee of the American Association of Colleges of Pharmacy, get together just before the session opens *(lower left)*; Franklin P. O'Brien, chairman of the executive committee of NPC, chats with Dr. Louis M. Orr, president of the American Medical Association, and George P. Larrick, commissioner of the Food and Drug Administration *(lower right)*.



Résumé of ■ ■ ■

history and evolution of the pharmaceutical industry

*by Herbert S. Wilkinson**

We can trace the pharmaceutical industry in America to a firm of wholesale and retail druggists, the Marshalls of Philadelphia. In 1786 they began making sal ammoniac and Glauber's salt. Farr and Kunzi started to make pharmaceutical chemicals in about 1812 and a few other firms began operations in the 1820's. In the 1840's other firms were established, such as the Charles H. Phillips Chemical Company, the William R. Warner Company, and Reed Carnrick. In 1868, the celebrated Doctor E. R. Squibb opened his first laboratory.

During the American Civil War pharmaceutical houses vigorously expanded, and distribution became national. Pharmacists as a class were extremely well informed on the medicinals of their time, so it is logical that from their ranks came such famous founders as Wyeth, Searle, Lilly, Merrell and others. At the same time, the spirit of scientific inquiry also pervaded medical fields and Doctors Abbott and Upjohn founded companies.

By the time these firms were established the modern age of therapeutics can be said to have started. Pasteur showed that germs caused infection. A vaccine for rabies launched the biologicals industry. Synthetic drugs, such as antipyrine, sulphonal, phenacetin and acetanilid began appearing.

World War I, creating a crisis in drugs, marked another milestone. Like most countries, the United States was almost completely dependent upon Germany for many of the new and potent synthetic drugs. The German chemical industry had given Germany a virtual monopoly in the field of synthetic drug making. The war shut off imports and America found itself virtually without such agents as arsenicals for syphilis.

American drug firms plunged at once into the task of making synthetic drugs. Abbott Laboratories was the first to succeed in producing commercial quantities of desperately needed procaine and barbital. From this point on, change was to be more rapid. In 1929, Banting and Best discovered one of the great medical gifts of mankind, insulin, which Eli Lilly has supplied ever since to millions of diabetics.

New discoveries sometimes come slowly and not always in the way we expect them to come. When Paul Ehrlich found that Salvarsan would cure syphilis, he opened the gateway to systemic chemical treatment for infectious disease. When the German, Gerhard Domagk, uncovered the values of sulfanilamide, a long list of infections came under effective attack for the first time. A host of sulfas emerged from the laboratories to establish chemotherapy firmly, once and for all, at the right hand of the physician.

If the sulfas marked heartening progress, penicillin must be placed in the spectacular category. Here, indeed, is where the pharmaceutical industry showed how it could come through with a crash program once a great new drug had been proven. It was the kind of success that was to be repeated some years later with the Salk vaccine. With penicillin, for the first time, the public became aware of the efficiency and dedication of an industry which had never been much in the public eye. When we speak of antihistamines, hormones, diuretics, tranquilizers, sedatives, steroids, anticoagulants, the man in the street, more often than not, knows what we are talking about. So a part of the story of the industry is this remarkable new awareness of its achievements.

These successes range along many fronts. In 1898, radium was discovered by the Curies and not long afterwards was first used therapeutically. It was the first of the radioactive medicines. Today radioactive compounds are useful and esssential tools in the armamentarium of the physician, increasing knowledge of the human body, detecting disease in early stages and, in some cases, arresting disease.

We are now entering our second decade in the steroid field, an area of exciting progress ever since Merck made the first big breakthrough with synthetic cortisone in 1949. Upjohn and Schering, among others, have come along with other developments and today no less than 30 firms are engaged in the hunt for still newer and improved steroid hormones.

Smith, Kline and French has led a large number of firms in marketing new tranquilizers, with the now celebrated results in the field of mental illness. In 1957 Upjohn introduced Orinase, the first oral antidiabetic agent.

Lesser known but also significant are many technical advances in methods and equipment. This progress—dating from the 30's—continues vigorously into the present. Not usually recognized by the general public, for example, is the impressive improvement in quality control measures. We know that the imported barks, herbs and crude chemicals of the early pharmaceutical days often were adulterated. Much of this could be traced to ignorance.

Before the development of chemistry as a science, there was little attempt to distill products for purification or to devise simple chemical tests for drug purity. Perhaps the first chemical tests in print appeared in the *Prussian Pharmacopeia* in 1799. Not until 1842 did *U.S. Pharmacopeia*, which had first been issued in 1820, introduce similar material.

We did not have pure drug legislation nationally until 1906, and then in part because such pharmaceutical manufacturers as Squibb, Abbott, Merck and others favored it. By 1938, Food and Drug Administration regulations for new drugs called for clinical tests, toxicity tests on animals, chemical descriptions of the drugs, procedures of manufacture, packaging, labelling and other highly technical information. This, too, is part of the evolution of the pharmaceutical industry. Anywhere from 10 to 20 per cent of a manufacturer's cost lies in quality control. It is another of the invisible ingredients which sets today's pharmaceuticals worlds apart from those of yesterday.

Our industry has come of age as a giant of its time. The slow evolution of the centuries has given way to rapid revolution. The remedies of the ancient Babylonians and of the Egyptian apothecaries, as well as most of the remedies of just a few decades ago, now belong to history. Their place has been taken by chemotherapeutic agents which are much more complex, often difficult to make, costlier and far more effective then any previously known to man. ■

* Vice President and Director of Sales Abbott Laboratories, North Chicago, Ill. This résumé and the six which follow are based on papers presented at the NPC Pharmacy Education-Industry Forum.

*by George B. Stone**

Résumé of ■ ■ ■

new product challenge

RESEARCH and the prompt commercialization through the new product development procedure is fundamental to the pharmaceutical industry and accounts for the tremendous growth of the industry in the past 20 years—and for the individual successes of the various companies.

New product development is a long, tedious, complex pathway more frequently beset with failures than with successes. The mere discovery of a new chemical compound which reveals a certain therapeutic action is not enough. Last year, for instance, more than 100,000 products were tested biologically or pharmacologically by the industry; about 2,000 were tested clinically in man. But only about 400 new products resulted. And only about 20 of these were basically new chemical entities.

For example, 5,000 analgesics have been discovered, but only eight are in common use; more than 4,000 antibiotics have been isolated, but only about two dozen have been marketed; of 14,000 compounds which have been tested for antimalarial potency, only about three or four are satisfactory for human use.

To insure safety, millions of trials in animals must be undertaken to establish potency, toxicity and contraindications. If the drug passes all of these tests with flying colors, the whole trial process must be repeated in the clinics under carefully controlled and observed conditions. In the development of one of the new oral drugs for treatment of diabetes, for example, more than one million patient-days went into the clinical program alone. Before a drug can be offered to the medical profession, the results of these experimental trials must gain the acceptance of the Food and Drug Administration.

The mechanical details in the successful development of a new pharmaceutical product range all the way from package size to palatability, from toxicity to tablet form, from new drug application to retailer announcement.

Almost every successful new product has its origin in long-range research planning. But the initial impetus may arise in very diverse areas of the companies involved.

Having determined the major areas of interest and the funds at hand, a company sets up the pharmacological screens and programs required to evaluate the chemical fruits of its own research . . . or the compounds derived from any other available source. Money must often be spent for research on the screen itself, to find a test which will point to promising chemical compounds, especially in areas where existing screening techniques are considered imperfect or unsuitable.

Once the screen has been devised, it is used to review as many chemical compounds as possible, as inexpensively as possible.

Out of the screen will come a number of promising candiates which demonstrate preliminary activity. The next step is to test the animal toxicity of these candidates so that a rough idea of their therapeutic index in various species can be determined. And then we kiss most of the contenders goodbye because they are too toxic.

Let us assume, however, that out of this screening and toxicity testing comes a promising compound for some specific indications. At this point a whole series of activities is initiated, involving many disciplines.

Immediately, additional toxicity and pharmacologic studies are begun. Now we have to know quite a lot more about safety and efficacy, to make preliminary and careful human trials. Pharmaceutical research will be called in to develop suitable dosage forms—whether tablet, capsule, parenteral or topical—or perhaps, eventually, all four.

Enter now process development—to work out various ways of producing the drug in bulk . . . and also in the dosage forms which may be approved. This may entail designing and building new equipment or redesigning existing facilities.

Work begins almost as quickly on one of the trickiest steps of new product evolution—the search for a name, or often two names—trade and generic. Marketing research steps in to make a preliminary survey of the current market, the pricing, the competitive products, the package sizes and all the other factors which enter into the total marketing picture. Testing procedures for potency and safety must be developed and specifications established for routine study and acceptance of the basic compound and the dosage form or forms.

But assuming the new drug has passed these hurdles and still looks promising, very careful clinical evaluation commences. It is surprising—and often disappointing—that with all our knowledge of pharmacology and toxicity in animals we still cannot translate results and conclusions into the human being. So again the majority of new drugs which work in animals fail in humans.

Once our new drug successfully bridges the gap from the lower vertebrates to *homo sapiens* another new series of activities is begun. Preliminary marketing plans are mapped out. The marketing research program is re-evaluated in relation to the existing market. A more complete study is made of the indications.

Data necessary for a new drug application is compiled in earnest now not only in terms of safety and efficacy but as concerns specifications, indications, claims relevant to the package insert, brochures and container. Preliminary marketing tests may be made on the dosage form and package size and also sometimes on palatability and patient acceptance.

Then a careful analysis is made of production cost—and projected into the future in relation to the market potential for the drug. So a pricing schedule is established.

The advertising and promotional program is blueprinted and carefully studied and reviewed. Out of this will come the plans for the monies to be expended for journal advertising, for direct mail, for sampling and for introduction notices to wholesalers, retailers and hospitals.

The day comes when the product goes to market and you sit back and hold your breath. For the first few weeks—or even months—it may be difficult to determine whether you have placed a winner or an "also ran." Industry-wide surveys show that in spite of all the exacting techniques developed by marketing research, four out of seven new products are not successful, two show some kind of profit and one makes a real contribution. Some surveys indicate that 60 per cent of new products fail to bring a return on the manufacturer's investment.

From start to finish, developing a new product and getting it to market takes anywhere from eight or nine months to many years.

This whole scheme of new product development—which is the real heart of the pharmaceutical industry—presents an ever-increasing challenge. ■

* General Manager, J. B. Roerig and Company, Division Chas. Pfizer & Co., Inc., New York, N.Y.

Résumé of ■ ■ ■

clinical evaluation of new drugs

*by Lawrence B. Hobson, M.D.**

JUST what is "a new drug?" Some drugs like quinine are unquestionable "old" though still used. Some like chlorothiazide are obviously "new" —new compounds with unexpected and useful activity. Others could fit either adjective perhaps.

How long and in how many cases must we use a drug before it stops being "new?" Do chemical variants of an old remedy qualify as "new" even if they have much the same activity? Does the discovery that an old injectible drug works as well when given rectally make the old remedy "new" again? When do novel combinations of known drugs enter the realm of newness?

The U.S. Food, Drug and Cosmetic Law and the administrative regulations implementing it require anyone introducing a new drug to prove its safety. In practice this stretches to include its efficacy as well. Clinical studies demonstrating safety and efficacy—together with data on the drug's composition, control techniques, pharmaceutic forms and laboratory investigations—make up the New Drug Application or NDA submitted to the Food and Drug Administration or FDA. The new drug cannot be sold in interstate commerce until the FDA satisfies itself concerning the safety—and often the efficacy—allowing the NDA to become effective. Even while he sells a new drug, the manufacturer must satisfy the FDA that any change he proposes in dosage, indications, pharmaceutic form, manufacture, etc. are safe and effective. This he does by submitting an amendment of his NDA for clearance. The FDA also has the power to inspect marketed drugs for potency, purity and conformity to the effective NDA. This—stripped to its barest essentials—reflects the FDA's role in the release and marketing of new drugs.

The company's research laboratories present the medical man with data on the new drug's composition and characteristics. While he gleans useful information from the chemical composition and synthesis or from the solubility and stability data, he usually finds the animal toxicity and pharmacology most informative.

His first problem can be phrased in this fashion: Do we know enough about this compound to give it safely to human beings—patients or volunteers? Have we enough evidence to predict that the new substance will exert some beneficial effect on the patients?

If the answer to both questions is "yes," he next must decide how much of the compound his studies will consume. He projects from the animal data how much a human must receive to produce detectible effects and what upper dosage limit its toxicity will impose. He guesses how many doses each experimental subject will require and how many subjects must be used to get significant but preliminary information on the compound's safety and efficacy.

With his laboratory colleagues he must select, too, the pharmaceutical form to be used. Must it be injected and if so where? Will it probably act on oral administration? Should it be tested topically? Then, too, he must decide what potency or concentration he wants. Here, of course, the laboratory data on solubility, stability and incompatibility usually impose limits.

Not the least troublesome question for a medical division is "Who will carry out the clinical investigations?" Very few industrial medical divisions actually conduct their own research on patients directly. There are sound ethical, legal and financial reasons for this but it means that the industry's doctors must find, enlist and aid competent clinical investigators in medical schools, large hospitals or medical research centers. The medical division provides these investigators with the available data on the new drug, gives them supplies of it and often helps design their studies.

Usually investigation begins with a few studies involving ten to 50 patients. If these show promise the laboratory prepares more material and as this becomes available the medical division initiates more and more clinical investigations.

The earliest work, carefully planned to minimize the risks, deals largely with the new drug's limits of tolerance—hence its toxicity and side effects. Usually the investigators begin with small doses, gradually increasing the amount given until optimal results or side effects signal that the upper dose limit has been reached. Later studies then probe the possible fields of the drug's usefulness, testing its effects against disease or symptoms when any clue suggests a possible benefit. Often this requires further investigation of various dosages. Unexpected side effects or more serious toxicity may still appear in these studies so that none can be casual research.

In almost all large pharmaceutical houses, the medical group determines what indications will be claimed for the new drug, what dosage regimens will be recommended and what medical superiority will be cited. These questions—basically those of a drug's safety and efficacy—are highly technical as a rule and require professional judgment in answering them.

The medical group's responsibilities do not end when the NDA becomes effective, however. New indications, new pharmaceutical forms and new combinations remain to be explored even while the company sells the drug. New indications demand full clinical investigation before submitting an amendment or supplement to the NDA.

All of the clinical investigations considered up to this point are carried out primarily to obtain information the company needs about any new product. To be sure, they also provide the clinical basis for the new drug's early promotion. The papers reporting the early studies stimulate interest in the product and give it its first promotional "push," but the studies themselves are really initiated to get scientific information.

A second group of clinical trials serves promotional ends more directly. These trials are set up primarily to increase the medical profession's acceptance of the new drug and to gain its greater use. They seek to do this by increasing the number of papers published in journals or presented at medical meetings—all dealing with the new drug.

These later studies often yield valuable new information, revealing other indications, documenting different dosage regimens and sometimes uncovering undetected dangers or side effects. They do this without impairing their promotional value.

The clinical investigations of a new drug, then, can extend from the moment the first person receives it until years after it appears on the market. They should continue just as long as they produce useful information. ■

* Director, Medical Division, E. R. Squibb & Sons, Division Olin Mathieson Chemical Corporation, New York N.Y.

*by Richard L. Hull**

Résumé of ■ ■ ■

marketing concepts

It is fashionable today to speak of companies as being "market oriented" or as having adopted the "marketing concept." Where once there was a "sales manager" or a "vice president in charge of sales," the tendency now is to have a "director of marketing" or a "vice president for marketing." Perhaps the functions remain essentially the same but the proponents of the new terminology visualize marketing as something much broader than sales.

Total acceptance of the marketing concept or of marketing as the most dominant function in the pharmaceutical industry could have many implications.

The first of these is better integration and coordination of our five traditional marketing functions—sales, advertising, distribution, public relations, and marketing research. Each complements all of the others and we can no longer afford to let them go their separate ways. Coordination of the efforts and budgets of the five activities calls for planning and this in turn becomes a sixth function in itself.

The second of recent developments is the increasingly closer relationship between the marketing function and new product planning. The greatest challenge which the marketing concept offers us is that of properly melding research and development on one hand and marketing on the other. The costs of getting a new product ready for the market are substantial and are constantly increasing. If a potential new product is fully developed and then not marketed but rejected and put back on the shelf for commercial failure, the waste to money and effort is even more serious.

Any proposed new product should have its commercial potential appraised by marketing even as its scientific and medical attributes are evaluated by the scientists in research and development. This should be a continuing process while the proposed product is still in the laboratory or in the clinic.

Here again, planning and coordination become necessary. If marketing should not dictate to or control the scientists in our laboratories, it is equally true that research and development must not assume control over marketing.

For every new product that does reach the market, there are many new compounds, or proposed new products, or product ideas that are killed or abandoned for one reason or another.

One great challenge to our industry today is to provide better facts which will in turn provide a sounder basis for planning. This applies both to new product selection and planning and also to the marketing or promotion of products already on the market.

One of the unique characteristics of our distribution system is found in the special relationship between the manufacturer, the pharmacist, the physician and the patient. Our products are sold to the pharmacist, either direct or through wholesalers; they are promoted primarily to the physician, but they are actually purchased by the patient. As a result we sometimes seem uncertain as to just who our customer really is.

As far as the retail pharmacist is concerned, we must not underestimate his role in the distribution of our products for those products must be readily available to the patient when and if demand is created.

Perhaps it is most realistic to think of the prescribing physician as our customer, for the use of our products is almost entirely dependent on him, and, consequently, the great bulk of our marketing effort is directed toward him.

As more and more physicians become specialists, it is increasingly important that we pinpoint our promotion through special mailing lists, by advertising in specialty journals and by having our professional service representative use discrimination in the selection of products to be detailed.

As we pinpoint our promotion more effectively it may follow that we concentrate more and more advertising and selling effort on the physicians who are our best prospects.

In another sense the patient is our customer, for without patients there would be no prescriptions written and no sales made. Last year the prescribing doctors wrote perhaps 300,000,000 new prescriptions. I know of no figures on the number of individual patients involved but it seems reasonable to assume that it may have been about 100,000,000. If we think of the physician as our customer, our market is small numerically, but our potential sales per customer are so large as to justify a very considerable promotional effort.

If we think of the patient as our customer, we are able to reach this tremendous population by concentrating our efforts on the relatively small group of physicians.

Just as our universe of physicians is clearly defined, so, thanks to pharmacy laws and licensing provisions, is our universe of retail pharmacies. Furthermore, American pharmacy has the happy custom of maintaining a complete and systematic file of scripts in the prescription department. All of this makes marketing research—particularly those studies which are concerned with measuring the flow of drug products—relatively easy for us.

The prescription audits are tremendously useful to us in our market planning. They give us a good approximation of existing markets and of competitive successes or failures. They reflect trends in the acceptance or decline of individual products or types of medication. They tell us which forms or strengths are moving. They help in determining dosage forms and package sizes. And last, but perhaps not least, they help to satisfy the natural curiosity of the marketing man and to give him a better feel of what is going on in the industry.

Generally speaking, this type of marketing research is best done by an independent research agency rather than by the individual companies. It is more efficient and prevents needless duplication. Also, the research agency serves as a buffer between the prescription file and the manufacturer, thus removing any question of violating the confidential nature of the prescription.

Another point at which we are able to measure the flow of products is through auditing of the retailers' purchase invoices.

Here again we are able to detect trends and it is particularly revealing to see whether sales of a new product hold up in the second, third, and fourth months after introduction. The prescription audit tells us nothing about over-the-counter sales or about the sales of proprietaries. The audit of purchases by retailers does.

We are operating in an increasingly fragmented market. There are no longer panaceas which are good for all the ills of man or beast. Rather we offer more and more specific medications and each product competes, or will compete, with a limited number of other products in its own area. Real success in our industry comes from the discovery or development of new products. ■

* Director of Marketing Research, Smith Kline and French Laboratories, Philadelphia, Pa.

Résumé of ■ ■ ■

ethical pharmaceutical promotion

*by Tobias Wagner**

THE most important respect in which ethical pharmaceutical promotion differs from consumer promotion to the laity is that it is dedicated almost as much to educating and imparting essential information as it is to selling.

Detailing is perhaps the most effective form of pharmaceutical promotion and, although the most costly, it undoubtedly enjoys the highest degree of acceptance among M.D.'s. A study done a few years ago by the *Journal of the American Medical Association* revealed that 74 per cent of physicians see all detailmen who call on them and another 22 per cent see representatives from selected companies. Only four per cent refuse to see any detailmen. A record of this sort could never have been achieved with such a discriminating and sophisticated audience if these detailmen had relied solely on the huckster's pitch instead of serving as one of the most reliable sources of medical information at the doctor's command.

These detailmen reach the physician in an indirect way, too. They cover all the pharmacies, educating their professional personnel to be able promptly and fully to supply the product information so frequently requested of them by physicians. At a conservative estimate the pharmaceutical industry as a whole spends in detailing almost $4,000 a year on each of these pharmacies, large or small.

But, like every medium of pharmaceutical promotion, detailing has its limitations. It costs a lot—between $9 and $10—for every doctor visit. Furthermore, even with the hypothetically maximum detail force, it would be impossible, practically and economically, to reach all of the 200,000 odd doctors in the U.S.A. in any given detailing period. In addition, not even the most fast-talking detailman can give anything like the full story on his drug in the few precious minutes alloted to each M.D. And lastly, and perhaps most significantly, the best detailman can see only six or seven physicians a day, so that literally weeks may elapse between his first doctor-call with a given new detail and the last doctor he can tackle with that same detail before his efforts are switched to another product.

Direct mail has its limitations, too, but it also has its own distinct advantages. First, if the company is wise enough not to over-advertise, direct mail is less costly than detailing.

Secondly, nothing opens the doctor's door to the detailman like direct mail. The doctor cannot advantageously discuss, or even criticize, a product unless he first knows something about it. Thus, in many company programs, direct mail paves the way for the detailman's arrival.

Third, direct mail is flexible, not rigid. If you find that you set your sights too high, if sales don't live up to expectations, you can rapidly reduce your direct mail or even, in the case of certain products, cut it out altogether.

Fourth, direct mail can get to more physicians faster than any other form of promotion.

And last, an indispensable function of direct mail is to reach the retail pharmacists on a nation-wide basis with new product information well in advance of the announcement to the physicians. This function of direct mail virtually guarantees that these pharmacies will be stocked to fill the first prescriptions they receive and will be prepared to perform their extremely important function of answering all physicians' queries intelligently.

Perhaps the biggest problem inherent in pharmaceutical promotion is the sheer bulk of the direct mail received by the physician. Last year, according to one reliable source, there was a slight decrease in total mailings—3,902 (comprising 6,513 pieces) as against 4,041 (comprising 6,824 pieces) in 1957. But the volume is still formidable.

The third major segment of pharmaceutical promotion is *journal advertising*. Medical journal advertising, I think, is looked upon with decided favor by the M.D. This is not hard to understand when it is remembered that most of the medical journals, from which the physician gleans the latest developments in practice, are largely supported by advertising. Furthermore, there is an impression on the part of the medical profession—usually entirely correct—that the ads in the journal he reads have received some sort of clearance from a constituted body of censors composed of physicians like himself. In addition, the journal advertisement takes on a certain psychological aura of authority by running cheek by jowl with scientific and expert editorial matter.

Once—not long ago—this journal advertising consisted mostly of full or half pages or double-page spreads which were essentially appealing eye-stoppers contrived primarily to remind the doctor of the product name and of an effective medical application of the drug. Product name, specific use and claims for effectiveness, supported by brief copy, were the traditional components.

Today, there has been a surprising expansion of this concept. Multi-page advertisements have become common. Some of these actually assume the proportions of exhaustive monographs on the product, running to many pages, printed by the company and delivered to the publication for binding-in in what is called an "insert."

Indeed, today, journal advertising has assumed some of the tremendous flexibility of direct mail—a company has a range of choice running all the way between a telegraphic message in black and white on a quarter page and a comprehensive booklet carried as an insert.

This business of pharmaceutical promotion is not just an extravagant experiment; it is a proven technic without which the pharmaceutical industry could not continue but which we never cease to scrutinize critically.

There is one rather prevalent and sweeping misconception about ethical pharmaceutical promotion—if it were not for the expense of promotion (particularly of the advertising) the pharmaceutical industry could afford to charge much less for drugs, thus greatly lightening the financial burden of illness.

As to this misconception, we must accept the premise that, in pharmacy as in any industrial endeavor, the pricing of an article approaching the market is largely determined by the anticipated unit cost of its manufacture. In the pharmaceutical industry, at least, this unit cost is estimated, to a great extent, on how fully the manufacturer expects ultimately to utilize his machinery and other fixed overheads and on how rapidly he hopes to absorb or amortize the tremendous investmen the has put into the research on, and the development of, his drug. Without the mass sales volume made possible by this expenditure on direct mail, detailing and medical journal advertising drug, prices would perforce be higher than they are. ■

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Résumé of ■ ■ ■

distribution and its purpose

*by Harry W. McNey**

THE drastic change which has taken place in the pharmaceutical business over the past 25 years has greatly complicated the problem of distribution. Gone are the days when the pharmacist could rely on an assortment of official and non-official drugs to compound the doctor's prescription. The shift to packaged specialties and particularly the rate of introduction of new products—about 400 per year—has created problems of inventory, availability and service.

It should be understood that there are great variations in the marketing methods of the different pharmaceutical houses. They can, however, be divided roughly into three groups according to their wholesale distribution policies. Group A is made up of houses that sell to wholesalers almost exclusively. This group is well represented by such manufacturers as Eli Lilly, Smith Kline and French, Searle, etc. The second group B consists of houses that sell primarily to the retailer, hospital, government, etc. on a direct basis. They use the wholesaler only as a depot for fill-in orders. This group is represented by such houses as Upjohn, Parke-Davis, Wyeth, etc. The third group C steers a middle-of-the road course. These manufacturers have a policy of limited direct selling which enables them to reap the advantages of a direct selling plan with the large retailers but still have enough volume left over to assure cooperation and wide stocking on the part of the wholesaler.

The pharmaceutical industry has had phenomenal growth and management has been hard pressed to build a distributing organization capable of promoting and selling the products that continue to stream from the research laboratories.

Fierce competition in our industry and the rate of product obsolescence have required greatly expanded coverage in the field. The typical territory of 20 years ago has been substantially reduced in size. Expanded coverage has obviously greatly improved our distribution, particularly on new products.

Now what about the channels of distribution? Let's start with the wholesale drug market. Drug wholesalers can be divided into three broad groups—first the full line service wholesalers who carry most of the 20,000 items sold in the retail pharmacy and who pride themselves on the ability to fill and ship quickly most any order referred to them. A typical wholesaler of this type handles about 600 retail accounts which send him approximately 350 orders per day. He travels 14 outside salesmen and has seven telephone salesmen on the inside.

A second group of wholesale drug companies are the cooperative or mutual houses. These companies are owned by member pharmacists and exist primarily because of savings made possible by the cooperative type operation. These savings are passed on to owner members. Cooperatives do not require the selling efforts of the independents and consequently do not have as many salesmen.

A third type of drug wholesaler is the short line house. These organizations have been successful and are rapidly growing in some parts of the country because of their concentration on the ethical pharmaceutical end of the wholesale drug business. By confining their distribution efforts to prescription items, they are able to give better service at lower cost than full line wholesalers who must handle less profitable products.

The retail pharmacist is the keystone in the pharmaceutical distribution structure. The retail drug market is about $6.7 billion of which $1.8 billions is in prescriptions alone. Approximately another $500,000,000 is in packaged medication. This market is made up of approximately 54,000 stores of which 49,000 are independently owned, the other 5,000 being chain stores.

The growth of the pharmacy's business is also very interesting. The average store of two decades ago did $40,000 business per year, filling five to 10 prescriptions per day at 91¢ each. Only 10 per cent of this volume was prescriptions. Today the average store grosses about $125,000 per year, fills 27 to 32 prescriptions per day at a price of almost three dollars each and 27 per cent of this volume is in prescriptions.

The hospital market consists of more than 12,000 institutions that purchase over $290,000,000 per year. This market is rapidly expanding. In 1909, 4,400 hospitals purchased $8,000,000 in drugs for use by patients in 400,000 beds. By 1955, this had gone up to 11,300 hospitals with 2,000,000 beds purchasing $250,000,000 in drugs. Estimates for 1960 are 13,500 hospitals with 2,800,000 in beds buying almost $350,000,000 in drug products

The dental market, while small, is nevertheless important, particularly to those companies selling antibiotics and anesthetics. Eighty-six thousand practicing dentists can use a lot of pharmaceuticals as proved by the total antibiotic sales of $30,000,000 yearly and local anesthetics sales of about $10,000,000. Eighty-five per cent of all dentists regularly write prescriptions for antibiotics, tranquilizers, narcotics and analgesics.

The veterinary market is a whole complex story in itself. It is characterized by the facts that veterinarians, unlike M.D.'s, expect to buy drugs and dispense them to their clients and that drugs which are "RX Legend" in the human field can be sold to the farmer without a prescription when a veterinary label is affixed. Furthermore, these drugs need not necessarily be sold by pharmacists in most states. Therefore, in addition to 12,000 veterinarians and some 20,000 drug stores with animal health departments, we have thousands of feed stores, hatcheries, co-ops, etc. competing for this business which amounts to about $325,000,000 per year.

This then is the pharmaceutical market—$2,450,000,000—almost two and a half billion dollars.

No discussion of pharmaceutical marketing would be complete without a look at the current status of fair trade. Fair trade can be divided into two categories—first, at the retail level and, second, at the wholesale level. Wholesale fair trade is practically dead and the retail variety is fighting for its life. Only 30 states still have effective retail fair trade.

It seems obvious that only a strong national law is capable of protecting the manufacturer's trade-mark and the orderly marketing of goods which is so desirable to the small businessman.

Another important factor in pharmaceutical pricing is the trade practice on returns. In general the manufacturer will accept products for full credit that have been in stock a reasonable length of time without movement. This principle of guaranteed sale is necessary to induce the retailer to stock new products before demand has been created. This same return goods privilege protects our accounts on dated products. Both of these factors are part of an overall industry policy of making quality products always available to the public. ■

* Director of Marketing, Lederle Laboratories' Pearl River, N.Y.

Résumé of ■ ■ ■

insight into future of the pharmaceutical industry

*by John J. Toohy**

THE future of the industry might for convenience, even at the risk of oversimplification, be discussed in two parts—(1) the medical products which the industry will procure and provide and (2) the extension and improvement in the administration of health services through education and distribution.

The general nature and purpose of the drugs of tomorrow can begin to be seen in the unparalleled investigative work now going on in manufacturers' research laboratories, in universities, in private laboratories and in the vast programs planned for governmental research, which in this country is receiving unprecedented support from the Administration and Congress, reflecting the will of the people.

The immediate targets concern the cardiovascular field with its grim record of mortality through coronary disease, atherosclerosis, strokes and hypertension; the many-sided problems of cancer, arthritis and the metabolic diseases; the vast potential in mental disease, where psycho-pharmacological drugs are finding great promise in behavior patterns and in establishing disease categories; the acute allergies, infectious and viral diseases and important areas of neurological and ophthalmic diseases.

Constant analysis of the needs of the professions, penetrating study of incidence of disease and appraisal of available products and procedures point out the road ahead for new product research and for product and process improvement.

For some of these conditions, we are beginning to see early glimmerings of products which are useful and effective under limited conditions, a far cry from the recent past where there was little or nothing specific. It is tempting to set a timetable for the emergence of "breakthrough" drugs in these important disease areas—for instance, the prediction of an all-purpose cancer drug within five or ten years.

With advances in cell chemistry, new developments in peptide and protein chemistry, the precise differentiation of physiological cause and effect, continuous front-line research will uncover new drugs for the control of diseases. Conditions we now refer to as "vague symptoms" will be named and defined, and answered, not alone to correct illness, but to seek out the pathways to the fullness of good health as distinct from disease entities.

A significant renaissance of biological agents has been moving in with the glorious victory over polio and now gives the pediatrician a precious preventive program with a four-way combined vaccine—DTPP. The riddle of virus diseases will clear up, one by one, and some of the immunizing vaccines may become as compulsory as smallpox. Radio-isotopes, already applied to cancer diagnosis and treatment, will expand into broader areas of usefulness.

An anti-cold virus is close at hand with obvious health benefits but with some fatalities for symptomatic products like nose drops, decongestants and paper tissues.

Our sights are on therapeutic agents that are *safe, effective and economical,* because this industry can have no compromise with safety and efficacy and must use every possible facility for quality production, for automatic controls, for simplified organic and microbial synthesis to bring our products within the range of all people.

The pharmaceutical industry is spending $200,000,000 in research— roughly 10 per cent of sales—a sum almost equivalent to profits after taxes. Government, universities and endowed research groups are planning to spend upwards of $600,000,000 to $700,000,000 of which NIH is earmarked for $400,000,000, so that the American public has behind it close to a billion dollars of research in the health field.

With this tremendous program at work with an industry willing and able to back research with other millions in manufacturing facilities, pharmacy must expect large increases in prescriptions and accessory sales—estimated to increase at least 50 per cent by 1965. The pharmacist is the primary distributor. His essentiality is assured by the multiplication of medicinal formulae not available today. Their complexity, their precision characteristics and the trend toward increased potencies place the pharmacist in the key role of advisor to the physician and guardian of the public health.

The demand for trained men and women is constantly growing. Considering the expanding field and the certain advance in population, the pharmacist has little time to perfect his talents for emulsions or suppositories. His great service to medicine will be measured by his knowledge, his expert judgment and his close coordination with the physician's plan and with dependable dispensing. His prescription will be compounded more with priceless know-how than art and manual skill.

In the area of the administration of health services there will be progressive, evolutionary change in training, education, prepaid health programs and distribution.

The industry lives to a large extent under the discipline of certain regulations. These will grow in scope and severity. There is excellent discipline within the industry, a reflection of the medical conscience. The industry has undertaken to do its part in observing a right conscience about its business and practices.

Where self-regulation fails to do its job, you can be certain regulation of one kind or another will move in as a corrective.

Confusion reigns because the prices of today's potent drugs are compared with popular prescriptions for symptomatic concoctions of two or three decades ago. And yet, the prices of individual drugs have frequently gone down, never up. In per cent of spendable income we see an up in 1958 at 1.03 per cent of disposable personal income, but in 1957 it was 0.95 per cent versus 0.98 per cent in 1956 and 0.94 per cent in 1933. But look what the physician has to work with now and consider the miracles accomplished by today's medicine!

While we have made great advances in public health here at home, we have a responsibility to assist peoples of other lands with our talents and our experience so they, too, may learn to build up their health status.

We should work together for the industry and the people who man it. The industry, in all its branches, needs good people, who are well educated and want to serve pharmacy, in dispensing laboratories, in the research and manufacturing laboratories and in the associated services of distribution and communication to our professional associates. ■

* General Manager, E. R. Squibb and Sons, Division Olin Mathieson Chemical Corporation, New York, N.Y.

From behind the iron curtain . . .

Selected Russian Drugs

by Robert M. Leonard, Ph.D.*

THERE has been a paucity of reliable information regarding the quality and quantity of drugs being produced by the pharmaceutical industry of the U.S.S.R. For example, Field[1] has written on the history, organization, training of personnel and services of manufacturing and retail pharmacy but points out that he did not examine questions of quality and quantity because of lack of sufficient data. McKeen[2] reported on economic and propaganda phases of Russia's drug industry and included some unofficial information on the quality, packaging and cost of a few antibiotics. These and similar reports do not disclose whether the drugs described in the Russian medical journals are plentiful and available for general distribution, or whether they are limited to laboratory and clinical investigation.

An interesting insight into truly representative Russian drugs may be possible by examining some officially prepared brochures distributed at the Soviet Pavilion at the Brussels Universal and International Exhibition of 1958. A set of these brochures[3] describing Russian drug products leads one to speculate as to why these particular drugs were selected by the U.S.S.R. to be presented to the eyes of the world.

A paper band, decorated with the painting of a rose in the center and bounded by the Russian word for vitamin, enclosed 27 brochures in this set. The inner side is decorated with the painting of a bottle and package, apparently containing vitamin C, bounded on either side by a Russian and English translation stating the value of ascorbic acid. The latter concluded with "the vitamin industry of the Soviet Union is constantly expanding the production and widening the range of preparations containing synthetic ascorbic acid. The vitamin industry of the Soviet Union which is staffed by highly trained chemists, engineers and workers, has developed and introduced the most up-to-date and improved methods for the synthesis of ascorbic acid, based on the latest scientific and engineering developments."

The cover of each brochure is individually designed and decorated. For example, most of the brochures (*see cuts*) which describe products of plant origin are faced with colorful paintings of the respective plants. Other brochure covers are decorated with paintings of the packaged product, chemical structures, titles and other designs. The monographs describing the drugs include the original Russian plus translations in French, English and German. Each monograph is headed by the drug title in the respective language subtended by the Latin title.

More than half of the monographs include a structural formula and, usually, a chemical name or a description of the source of the drug. Physical properties are listed but sometimes describe the final dosage form rather than the raw chemical. The main portion of most of the monographs is titled "Uses, Administration and Dosage." Contraindications are listed separately and titled as such. "Supply" and "Storage" are the final headings. Under the storage requirements several of the drugs are classified either as List A or List B. The List A drugs should be kept "under lock and key" and the List B drugs should be "preserved with precautions."

The products described in the brochures represent a number of drug categories but notably absent are antihistaminics, diuretics, glucocorticoids and psychotherapeutic adjuncts. In fact, a Soviet scientist, writing in *Izvestia*, recently criticized Russia's pharmaceutical industry because it does not produce glucocorticoids, forcing the physicians to turn to outside sources such as western embassies to procure them.[4]

It is interesting to note that, counting two antibiotics, ten of the 27 drug products or about 37 per cent are obtained from plants. About 40 per cent of the preparations in the Soviet Pharmacopeia are of plant origin. Research and development of plant drugs is encouraged because of their availability and economy. Typical is the anticholinergic drug, grimalin, extracted from the roots and leaves of a Scopola plant growing in the Central Himalayas and cultivated in the province of Moscow.[5]

Starting with the brochure describing the Russian synthetic analgesic, Promedol, we find a drug chemically and pharmacologically similar to alphaprodine (Nisentil), meperidine (Demerol) and anileridine (Leritine). Promedol is 1, 2,5 - trimethyl-4-phenyl-4-propionoxypiperidine hydrochloride, whereas alphaprodine is the 1,3-dimethyl product. Reports of the experimental work with Promedol began appearing in the literature in 1954 and Guseva[6] found the analgesic action to be considerably lower than morphine in experimental heat burns. In addition to the usual clinical indications for this and similar analgesics, the brochure states that "in obstetrics promedol is used for anesthesia and speeding up labor." For this purpose two to three ml. of a one or two per cent

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* Presented to the District of Columbia Pharmaceutical Association and the City of Washington Branch of the APhA at Atlantic City, N.J., June 24–26, 1959.

[1] Field, M. G., *Amer. Prof. Pharm.* **25**: 24 (1959).

[2] McKeen, J. E., *Drug and Allied Industries* **45**:21 (1959).

[3] The brochures were kindly loaned to the author by George B. Griffenhagen, who mentioned them in a report to THIS JOURNAL **19**: 604 (1958.) Quotations are from the English translations as they appear in the official brochures of the U.S.S.R. and are used freely in an attempt to illustrate some of the original style and content.

[4] *Washington Post and Times Herald*, "Scientist Raps Red Drug Trade," June 8, 1959.

[5] Ivanova-Neznamova, Yu. A., and Sudakova, S. A., *Sovetsk Med.* **3**: 89 (1957).

[6] Guseva, E. N., *Byull. Eksptl. Biol. i Med.* **38**:56 (1954); *Chem. Abstr.* **49**: 8491h (1955).

Dr. Robert M. Leonard—The educational side of pharmacy has been Dr. Leonard's career almost from the time he received his B.S. in pharmacy from Idaho State College in 1944. After serving his apprenticeship in Idaho and Utah he became a registered pharmacist in 1945 and then turned to the teaching field From teaching assistant at the University of Minnesota college of pharmacy (1945 to 1947) he has risen to the post of assistant dean and associate professor of pharmacology and pharmacognosy at George Washington University school of pharmacy. Added highlights of his career include a three-year fellowship from the American Foundation for Pharmaceutical Education and his Ph.D., received in 1953, from the University of Minnesota.

solution is injected subcutaneously. Although it wasn't included in the government brochures, Anadol is Russia's alphaprodine.[7]

A systemic antibiotic is exemplified by Albomycin but the monograph does not include its formula or derivation. According to Brazhnikova,[8] albomycin is an antibiotic isolated from cultures of *Actinomyces subtropicus*. The similarity of this name to one of our trade names is confusing but novobiocin (Albamycin and Cathomycin) is obtained from cultures of *Streptomyces niveus* or *S. spheroides*. Albomycin was introduced about 1952 and is indicated primarily for staphylococcal and pneumococcal infections with lesser value in streptococcal infections.

A topical antibiotic described is gramicidin S (gramicidin C). According to a 1946 report by Sharkova and Brazhnikova[9], there are four available strains of the soil bacterium, *Bacillus brevis*, which produce gramicidin S. These authors proposed that the strains be named "var. G.B." which stands for Gauze and Brazhnikova. Gramicidin S differs chemically from gramicidin D in the number of amino acid radicals making up the cyclopeptides, five and four, respectively. According to early Russian reports, gramicidin S is superior to gramicidin D and tyrothricin against staphylococci.

Diocide is the name given to a germicidal solution prepared by dissolving two different tablets in water. One tablet is made up of 350 mg. of "ethanolmercurichloride" (possibly ethylmercuric chloride or Ceresan) and the other of 330 mg. of N-cetylpyridinium (Ceepryn) bromide. Korchagina[10] reported in a Russian journal of surgery that five-minute treatments with 1:3000 solutions of Diocide enables a surgeon to operate without gloves.

An antimalarial, Aminoacrichine (aminoacrichin; aminoacriquine; aminoakrikhin), is chemically similar to quinacrine (Atabrine), differing only by the addition of an amino group on carbon 7 of the acridine nucleus. In addition to its antimalarial properties, the drug is said to be effective in the treatment of taeniasis and trichomoniasis in man and theileriasis in cattle.

A second antiprotozoan proposed for the treatment of trichomonal diseases is Trichomonacide. It appears to be a chemical hybrid of several of our antiprotozoan compounds, i.e., hydroxystilbamidine, chloroquine (Aralen) and primaquine. The drug is administered both locally and systemically in the treatment of trichomoniasis.

Two antituberculotics, Phthivazid (phthivazide; phtivazid; vanizide) and Saluzide (saluside; salusid), are included in the brochures and were introduced clinically in 1955 and 1956, respectively. Both drugs are chemically and pharmacologically related to isoniazid. The structural formula and the chemical name "Isonicotinoilhydrazon 4-oxi-3-methoxibenzaldehyde" are included in the brochure for Phthivazid.

Saluzide, is described as a derivative of isonicotinic acid hydrazide. It was synthesized in 1952 by Shchukina and Sazonova.[11] An unofficial source refers to Soluble Saluzide as the diethylammonium salt of 2-carboxy-3,4 - dimethoxybenzolisonicotinylhydrazone.[12] In miliary tuberculosis and tuberculous meningitis it is recommended that streptomycin be combined with therapy.

Cuthizone (cuthizon; kuthison; kutizon), *p*-isopropylbenzaldehyde thiosemicarbazone, is described in the government monograph as shortening the duration of all forms of virus influenza in adults or in children. It is chemically similar to the antituberculotic, *p* - acetylaminobenzaldehyde thiosemicarbazone (Tibione) and was compared with the latter drug by Makeeva and Pershin[13] in 1953 and found to possess higher tuberculostatic activity. Special care is cautioned for administration to patients with liver disease.

Four antispasmodics are represented in the collection, three of which are chemically related to the anticholinergics, adiphenine (Trasentine) and benactyzine (Suavitil). The fourth antispasmodic is a tropinic ester of diphenylacetic acid, chemically similar to benztropine (Cogentin). Like benztropine, this latter drug, Tropacine, is used in the treatment of parkinsonism and similar diseases accompanied by increased muscle tone. It was studied experimentally for the treatment of nervous disorders in 1955 as reported by Roccin and Abozinym.[14] The government brochure lists spasms of smooth muscles of the internal organs, gastro-duodenal ulcer and bronchial asthma as other clinical indications.

Aprophene (aprophen), first of the three aforementioned antispasmodics, contains a methyl group in place of a hydrogen atom and hydroxyl group in adiphenine and benactyzine, respectively. It produces typical atropine-like side-effects.

The remaining two antispasmodics, Diprophene (diprophen; diprofen) and Tiphene (tiphen), are both esters of diphenylthioacetic acid, the dipropylaminoethyl and diethylaminoethyl esters, respectively. In 1957, Liberman[15] reported on the laboratory and clinical investigation of aprophene and diprophene. Tiphene is chemically similar to adiphenine (Trasentine) except for the sulfur atom in place of the oxygen atom in the diphenylacetic acid of the former. Diprophene is used as an antispasmodic in vascular spasms, especially of the limbs, and in spastic conditions of other smooth muscles.

The next two products are members of the parasympathomimetic group of drugs. Armine is described as an ester of alkylphosphoric acid and a cholinesterase inactivator. Like isoflurophate (diisopropyl fluorophosphate; DFP; Floropryl), it is used to produce miosis in the treatment of glaucoma. The monograph suggests that Armine be used in combination with pilocarpine to achieve a more complete effect. It is capable of producing side-effects similar to those of isoflurophate. Aluf[16] reported on the pharmacology of Armine in 1955.

[7] Sokolov, I. V., *Sovetsk. Med.* **8**:62 (1956); *Abstr. Sov. Med. PT.A* **2**: 38 (1958).
[8] Brazhnikova, M. G. et al., *Doklady Akad. Nauk SSSR* 99:827 (1954); *Chem. Abstr.* **49**: 5573f (1955).
[9] Sharkova, A. S. and Brazhnikova, M. G., *Zhur. Mikrobiol. Epidemiol. i Immunobiol.* **3**: 8 (1946); *Chem. Abstr.* **45**: 1195 (1951).
[10] Korchagina, E. L., *Khirurgija* **7**: 86 (1956).
[11] Pershin, J. N. et al., *Probl. Tuberk.* **6**: 30 (1955); *Abstr. Sov. Med. PT.B* **1** : 180 (1957).
[12] Izumrudova, Z. L., *Med. Promysh. SSSR* **5**: 47 (1957); *Abstr. Sov. Med. PT.A* **3**: 52 (1959).
[13] Makeeva, O. O. and Pershin, G. N., *Zhur. Mikrobiol., Epidemiol. i Immunobiol.* **8**: 3 (1953).
[14] Roccin, C. A. and Abozinym, Yu. V., *Z. Nevropat. Psikhiat.* **51**: 48 (1955); *Abstr. Sov. Med. PT.B* **1**: 74 (1957).
[15] Liberman, S. S., *Med. Promysh. SSSR* **6**: 43 (1957); *Abstr. Sov. Med. PT.A* **3**: 48 (1959).
[16] Aluf, M. A., *Farmakol. i Toksikol* **18**: 21 (1955).

The second parasympathomimetic, galanthamine, is an alkaloid first isolated from the tubers of *Galanthus Woronowii* Losinsk. (Fam. *Amaryllidaceae*)[17] in 1952[18] and later reported to possess anticurare activity.[19] Its chemical structure is similar to that of the alkaloid, lycoramine, which is present in *Lycoris radiata* Herb. (Fam. *Amaryllidaceae*[20]). Galanthamine differs by the presence of an ether bridge, an ethyl group in place of a methyl group, one less hydroxyl group and an additional double bond. Mashkooskii[19] was impressed by the great difference between this structure and those of other anticurare drugs. The brochure describes galanthamine hydrobromide as being used in myasthenia gravis, myopathy, after-effects of poliomyelitis, sensory and motor disturbances allied to diseases and traumatic injuries of the nervous system, polyneuritis, and radiculitis. Epilepsy, hyperkinesis, bronchial asthma, stenocardia (angina pectoris), and bradycardia are listed as contraindications.

The next three drugs possess antihypertensive properties. The first drug, phenatine (phenatin), a condensation product of phenamine and nicotinic acid, is the phosphate of beta-phenyliso-propylnicotinamide. Guchok[21] compared the pharmacological properties of phenatine and methylphenatine and found that methylation increased the hypotensive action and the toxicity. Phenatine is chemically related to beta-pyridyl carbinol (Roniacol) and nikethamide (Coramine) and stimulates the central nervous system like the latter in addition to being hypotensive like the former. Arbuzov and Anosova[22] observed a leucopoietic action in rabbits and claimed that phenatine prevented lethal benzene poisoning and shortened the recovery period. The government brochure states that phenatine is used in the early stages of hypertension and as a C.N.S. stimulant.

A second antihypertensive drug, salsolidine (salsolidin) is an alkaloid found with salsoline in the plant, *Salsola Richteri* Karel.[23] (Fam. *Chenopodiaceae*). The alkaloid is described as "chloral hydrate 1 - methyl - 6,7-methoxytetrahydroisoquinolin." An unofficial source[24] lists salsolidine as 1,2,3,4 - tetrahydro - 6,7 - dimethoxyr - 1 - methylisoquinoline. Salsoline differs only by the presence of a hydroxyl group instead of a methoxy group on carbon 6. Salsolidine hydrochloride is described in the brochure as dilating the peripheral blood vessels and lowering the blood pressure.

The third antihypertensive agent is a ganglionic blocking alkaloid, nanophyne (nanophyn; nanophine; nanofin). The alkaloid was isolated from the upper parts of the plant *Nanophyton erinaceum* Bunge (Fam. *Chenopodiaceae*) by Kuzovkov and Menshikov in 1950.[25] In 1957, Syrneva[26] reported that nanofin, a synthetic racemic derivative of one of the alkaloids of *Nanophyton erinaceum*, possesses ganglionic blocking activity five to seven times greater than tetraethylammonium chloride (Etamon). Nanophyne is used for the "treatment of hypertension in the one and two stage and for treatment of dermatoses of neurogenous origin."

Another plant drug, cytisine (cytisin; tsitizin), an alkaloid obtained from the seeds of *Cytisus laburnum* Linn. and *Thermopsis lanceolata* R. Br. (both Fam. *Leguminosae*), is described as an effective respiratory stimulant that is also capable of raising the blood pressure. Cytisine was first identified in 1931 and Zachowski[27] reported on its pharmacology in 1938. Mitchell[28] reported on 10 cases of laburnum poisoning in children due to its cytisine content and noted a resemblance to the effects of nicotine. Cytisine is used "in cases of reflex respiratory arrest during operations, in traumas and different intoxications (by CO, HCN, narcotics, etc.) and infectious diseases; in shock and collaptoid states, respiratory and circulatory inhibition in the postoperative period; in asphyxia of the newborn."

Elatine, an alkaloid obtained from *Delphinium elatum* Linn. (Fam. *Ranunculaceae*), possesses skeletal muscle relaxant properties resembling tubocurarine. Its curariform activity was studied in 1956[29] along with the smooth muscle antispasmodic effects of eldeline, another alkaloid of this plant. Elatine is administered orally for "lessening the pathologically increased motor tone, due to vascular traumatic and other injuries of the brain and spinal cord, in hyperkinesis, etc." The action is antagonized by physostigmine and neostigmine.

Two cardiotonic glycosides are represented in the collection of brochures.

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[17] Taylor, Geo., *Index Kewensis—Supplementum IX*, Clarendon Press, Oxford (1938). (No authors or families were included for the plants described in the official brochures.)

[18] Proskurnina, N. F. and Yakovleva, A. P., *Zhur. Obshchei Khim.* **22**: 1899 (1952); *Chem. Abstr.* **47**:6959 (1953).

[19] Mashkooskii, M. D., *Farmakol. i Toksikol.* **18**:21 (1955).

[20] *The Merck Index*, 6th ed., Merck and Co., Inc. Rahway, N.J. (1952).

[21] Guchok, M. M., *Farmakol. i Toksikol.* **18**:17 (1955).

[22] Arbuzov, S. Ya., and Anosova, E. M., *Fisiol. Zhur. SSSR* **42**:163 (1956); *Chem. Abstr.* **50**:9608 (1956).

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[24] Barbier, A. M. and Rumpf, P., *Bull. soc. chim. France* 1953: 293; *Chem. Abstr.* **48**: 2071 (1954).

[25] Kuzovkov, A. D. and Menshikov, G. P., *Zhur. Obshchei Khim.* **20**: 1524 (1950); *Chem. Abstr.* **45**:2485g (1951).

[26] Syrneva, Yu. P., *Med. Promysh. SSSR* 5:42 (1957); *Abstr. Sov. Med. PT.A* **3**:49 (1959).

[27] Zachowski, J., *Arch. exptl. Path. Pharmakol.* **189**:326 (1938).

[28] Mitchell, R. G., *Lancet* **261**:57 (1951).

[29] Dozortseva, P.M., *Farmakol. i Toksikol.* **19**:42 (1956).

Дионин
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Цитизин

Erysimin is a crystalline glycoside obtained from the plant *Erysimum canescens* Roth (Fam. *Cruciferae*). Its onset and degree of action are likened to strophanthin, and it is not cumulative. Loshkarev [30] noted the similarity to strophanthin and described its action as lasting 24 hours and thus superior to the former. It was tried clinically[31] and is used in the treatment of cardiac failure.

Neriolin, the second cardiac stimulant, is described as "a crystalline glucoside extracted from the leaf of the oleander, *Nerium oleander*" Linn. (Fam. *Apocynaceae*). According to one source,[32] neriolin is synonymous with oleandrin. Straub reported on the extraction of oleandrin as early as 1918.[20] Oleandrin contains an aglycone with the same empirical formula and melting point as gitoxigenin[33,34] which is present in a number of species of Digitalis, including *purpurea* Linné and *lanata* Ehrh. According to the brochure, neriolin is similar to digitalis in action, but acts much faster and has less pronounced cumulative action than the latter. It is used for the "I and II forms of acute and chronic inadequate blood circulation; especially for cardiac disease of the mitral valve with perpetual arrhythmia."

Two leucopoietic agents are included in the brochures. Leucogen (leikogen), described as "2-(alphaphenyl carbethoximethyl) - thiazolidin - 4 - carbonic acid," and Thesan, which is unidentified chemically or as to its source. Both are alleged to stimulate leucopoiesis in toxic and infective leucopenias or in leucopenias which develop as a result of chemotherapy or radiotherapy of malignant neoplasms. Leucogen is also used propylactically during the course of roentgen or radium therapy.

An antineoplastic drug, colchamine, is described as a secondary base extracted from the plant, *Colchicum speciosum* Stev. (Fam. *Liliaceae*). The compound is illustrated by a rather doubtful looking structural formula. Colchamine is said to cause inflammatory and necrotic symptoms when it comes in contact with the skin and, also, may be absorbed through the skin causing general intoxication. It is prepared as an ointment containing 0.5 per cent colchamine, synthomycin (chloramphenicol; Chloromycetin; etssintomitsin; syntomycin; sintomitsin; etssyntomycin), thymol, Emulgator (emulsifying agent), ethyl alcohol and water. The ointment is used "for the treatment of the exophytous and endophytous forms of cancer of the skin in the first and second stages of the disease."

Cramer and Brodersen[35] in 1944 studied the topical application of colchicine ointment to papilloma of the genital tract, recurrent mammary cancer, and basal cell carcinoma, but it did not inhibit the spread by the lymphatics. There are numerous reports in the literature on the experimental use of colchicine in treating mouse and rat tumors as early as 1937. At the present time the application of podophyllin to certain papillomas, especially condylomata acuminata, is about the extent of this type of therapy in th United States and has not replaced roentgen therapy and surgery.

Betasine (betasin), or diiodotyrosine, is included in the brochures and is said to be used for the "treatment of patients with an increased function of the thyroid gland (mild and intermediate forms of thyrotoxicosis)." Physiologically, this compound is the precursor of thyroxine and triiodothyronine (liothyronine; Cytomel). According to Sollmann,[35] diiodotyrosine has very little pharmacological action as such and it tends to mitigate the phenomena of clinical and experimental hyperthyroidism by acting chiefly as a source of iodine.

The final product in the set of selected Russian drugs is named Urozine and the tablets are composed of 220 mg. of piperazine phosphate, 100 mg. of lithium benzoate and 250 mg. of urotropin (methenamine). According to the monograph, the preparation is used in gout, renal and urinary calculi, and chronic polyarthritis.

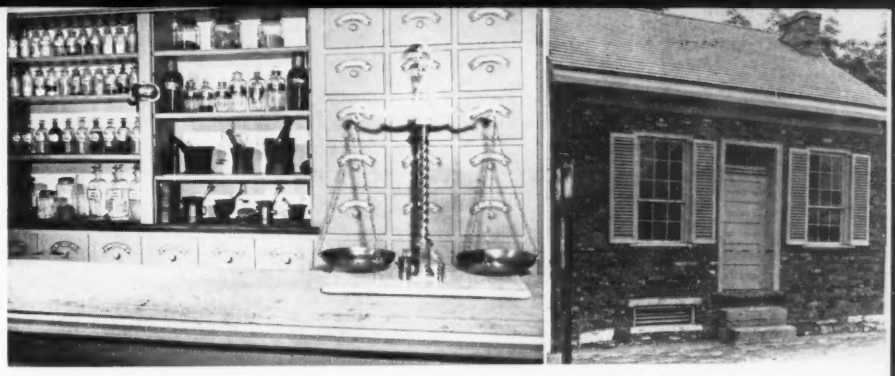
Piperazine possesses no uricosuric properties but is an effective anthelmintic. It was introduced for the treatment of gout during the turn of the 19th century because it was found to be an excellent solvent for uric acid *in vitro*. As early as 1916, Haskins reported that such a small fraction appeared in the urine that its solvent power for urate stones was even less than that of sodium bicarbonate. The lithium ion has no rational use in therapeutics and is relatively toxic. The latter fact was sadly demonstrated when lithium chloride was used indiscriminantly as a substitute for sodium chloride.

Lipowitz[35] in 1841 suggested the use of lithium carbonate in the treatment of gout because it was about four times more effective than sodium carbonate as a solvent for uric acid. It was introduced clinically for this purpose by Ure in 1844 and by Biswanger in 1847. It was abandoned as a therapeutic agent in the treatment of gout when it was finally realized that the solvent action of lithium does not take place under the conditions of the body or urine. Methenamine and related compounds were advocated as urate solvents by Stevens and May in 1911 and Haskins in 1915 because the formaldehyde dissolved uric acid *in vitro* even in the acid urine necessary for the formation of formaldehyde.[35] However, in 1916, Hanzlik reported that such action was imperceptible with ordinary doses.[35] In summary, the three compounds contained in Urozine have no rational basis in the treatment of diseases of abnormal uric acid metabolism.

The preceding completes the discussion of the drugs described in the brochures distributed by the Soviet Union at Brussels. How do they compare with 27 drugs and dosage forms that you would select to represent the highest achievements of our capitalistic pharmaceutical industry?

[35] Sollmann, Torald, *A Manual of Pharmacology*, 8th ed., W. B. Saunders Co., Philadelphia, 1957.

[30] Loshkarev, P. M., *Aptechnoe Delo* 4(5):20 (1955).
[31] Pomerantsev, V. P., *Terap. arkhiv* 27(6):24 (1955); *Abstr. Sov. Med. PT.B* 1:40 (1957).
[32] Unlisted Drugs 10(5):47 (1958)
[33] Llopis, A. B., *Galenica Acta* (Madrid) 8:101 (1955).
[34] Wilson, C. O., and Gisvold, O., *Textbook of Organic Medicinal and Pharmaceutical Chemistry*, 3rd ed., J. B. Lippincott Co., Philadelphia, (1956).



Part of the 180-piece assortment of 18th and early 19th century apothecary equipment (left) donated to the restored McDowell Apothecary (right) in Danville, Kentucky, is shown here. The collection includes colorful glassware of striking period design by Scottish, English, French and U.S. craftsmen. The shop was refurnished with shelving for glassware and jars and 79 drawers of the type used by pharmacists of that era to store botanicals and medicinals. Twelve English delft drug jars date back to mid-17th century, two rare carboy-shaped stock bottles, made in Scotland, to about 1780. The polished brass balance, right foreground, was made in Vienna in 1842.

Dedication of a Pharmacy Shrine ■ ■ ■

McDowell Apothecary Shop Restored

A journey back into history for an inspection of an early American pharmacy awaits visitors at the recently restored McDowell Apothecary Shop in Danville, Kentucky. The shop, restored by the Kentucky Pharmaceutical Association was dedicated August 12.

Dr. Ephriam McDowell, noted as the first physician to successfully remove an ovarian tumor, opened his shop in the early 1800's when most every doctor was his own apothecary.

The small brick shop, with its two small rooms and cellar, was built around 1792. Approximately three years later, young Dr. McDowell began his practice of medicine and surgery and purchased the shop using the front for drugs and keeping his office in the rear.

Later he built a white, two-story, frame house next door for his home. The building, restored by the Kentucky Medical Society, has been maintained as a public shrine.

The little apothecary shop, its timbers warped and decayed, bricks crumbling and windows broken, was lost in a jungle of neighborhood shacks and condemned to destruction. It was decided to tear it down, but Sterling Coke of Lexington protested razing the first apothecary shop west of the Allegheny Mountains.

In 1955, Coke's protests reached the ears of the Kentucky Pharmaceutical Association which proceeded to raise thirty thousand dollars to restore the Apothecary Shop. Largest single contributor was the Eli Lilly Foundation.

Dr. McDowell's shop was restored with infinitesimal care under the direction of architect Julian Oberwarth of Frankfort, Kentucky, who restored the McDowell house many years ago. Original materials were, wherever possible, scraped off or sanded smooth and used again. Extreme care was taken to keep the furnishings within the exact period.

George W. Grider, a Danville pharmacist and member of the Kentucky Pharmaceutical Association, was named chairman of the restoration committee to supervise the work of reproducing and refurbishing the McDowell Apothecary Shop. He spent many long hours at the shop inspecting the restoration work and insuring exact duplication of the original shop whenever possible. Also providing counsel in the restoration of the shop were Dr. Glenn Sonnedecker, director of the American Institute of the History of Pharmacy, and George B. Griffenhagen, director of communications of APhA.

The ancient building next door was cleared away. A gray fence was built along the front sidewalk to match the new shutters and door on the house. A high brick wall encloses the terraced back lawn and a brick archway opens into the garden of McDowell's home.

As a visitor enters the Apothecary Shop, he sees a counter facing the front door where Dr. McDowell compounded prescriptions for his patients. Against the far wall, painted in a mellow cream color of the period, are drawers built into the wall from counter height to the floor. On each drawer is a hand-lettered, gilded label, identifying the contents—"Belladonna," "Crocus Saffron," "Flores Arnicae," "Folia Digitalis," "Lignum Quassia," and many other drugs popular in that period. Dean Earl Slone of the University of Kentucky's School of Pharmacy has arranged for a supply of drugs to be kept in the drawers of the shop.

Above the drawers are adjustable shelves for stock, bottles of patent medicine, jars of ointments, acids, tincture, tars, waxes and vegetable drugs. On these are apothecary jars including many choice jars in queensware and colorful glassware of striking period design made by early craftsmen in Scotland, England, France, and the United States.

Among the older pieces are 12 English Delft drug jars dating back to mid-18th century, two rare green carboy-shaped stock bottles made in Scotland about 1780 and a massive, decorated leech jar. Early American mortars and pestles and balances also decorate the shop.

The collection of rare 18th and 19th century pharmacy equipment, glassware, and ceramic jars was assembled by Sydney Blumberg of Newton, Connecticut, a retired pharmacist and collector of antique apothecary ware. It was presented to the Apothecary Shop by Pfizer

Laboratories and J. B. Roerig & Company Division, Chas. Pfizer & Co., Inc.

Dedication ceremonies for the McDowell Apothecary Shop were presided over by E. M. Josey, Frankfort, secretary of the Kentucky Pharmaceutical Association. The invocation was given by Dr. Thomas A. Spragens, president of Centre College.

Dr. Glenn Sonnedecker, Director of the American Institute of the History of Pharmacy, University of Wisconsin, in his address contrasted the place of drugs in the practice of medicine in 1809 and 1959.

"The Effect of the McDowell Operation on the Growth of Surgery" was presented by Dr. John C. Burch, Professor of Gynecology, Vanderbilt University. Both Dr. Sonnedecker's and Dr. Burch's addresses are published in the September, 1959 issue of *The Kentucky Pharmacist*.

In December, the Post Office Department will issue a stamp in Dr. McDowell's honor commemorating the 150th anniversary of his famous operation on Christmas Day. Postmaster General Arthur Summerfield has given authorization for 120,000,000 stamps to be printed in maroon on white, featuring a likeness of McDowell, to be issued at Danville.

The shop will be open from 9 a.m. to 4 p.m., Monday, Tuesday, Thursday, Friday and Saturday. On Wednesday and Sunday it will be open from 1 to 4 p.m. An admission fee of 50¢ is charged visitors and this includes a tour of the McDowell house.

Calendar of Events

OCTOBER

12–14	Assn. of Official Agricultural Chemists Inc., 75th anniversary, Shoreham Hotel, Washington, D.C.
14–16	Parenteral Drug Assn. annual convention, Statler Hotel, New York, N.Y.
14–16	Pharmaceutical Manufacturers' Assn., biological section meeting, Drake Hotel, Chicago, Ill.
19–23	National Safety Congress and Exposition, Chicago, Ill.
19–23	American Public Health Assn. annual meeting, Atlantic City, N.J.
22	Maryland Pharmaceutical Assn., fall regional meeting, Peter Pan Inn, Urbana, Md.
23–27	American Heart Assn. annual meeting, Convention Hall, Philadelphia, Pa.

NOVEMBER

2–4	Pharmaceutical Manufacturers' Assn., research and development section, White Sulphur Springs, W.Va.
3–6	7th Annual Symposium on Antibiotics, Washington, D.C.
7–12	National Wholesale Druggists' Assn. annual meeting, Bal Harbour, Fla.
8–11	Assn. of Military Surgeons of U.S., Mayflower Hotel, Washington, D.C.
11–12	U.S. Public Health Service Cancer Chemotherapy Congress on Clinical Anticancer Drug Research, Statler Hotel, Washington, D.C.
11–14	Wisconsin Fall Pharmacy Institute (University of Wisconsin and Wisconsin Society of Hospital Pharmacists), Madison, Wis.

DECEMBER

1	Toilet Goods Assn., scientific sections' midwinter meeting, Waldorf-Astoria Hotel, New York, N.Y.
7–9	Pharmaceutical Manufacturers' Assn., eastern regional midyear meeting, Waldorf-Astoria Hotel, New York, N.Y.
7–10	American Medical Assn., clinical meeting, Dallas, Tex.
9	Remington Medal Dinner honoring Justin Powers, New York, N.Y.
10	National Pharmaceutical Council, New York, N.Y.
26–31	American Assn. for Advancement of Science annual meeting, Chicago, Ill.

1960

JANUARY

6	New York Cosmetic Chemists meeting, Hotel New Yorker, New York, N.Y.

FEBRUARY

8–10	Pharmaceutical Manufacturers' Assn., central regional meeting, Edgewater Beach Hotel, Chicago, Ill.
14–17	American College of Apothecaries annual convention, Hotel Americana, Bal Harbour, Fla.
15–16	Pharmaceutical Manufacturers' Assn., western regional meeting, Ambassador Hotel, Los Angeles, Calif.

MARCH

13–18	National Health Forum (National Health Council), Miami, Fla.
27–28	APhA House of Delegates, Statler Hilton Hotel, Washington, D.C.
29–30	USP decennial meeting, Statler Hotel, Washington, D.C.

APRIL

13–15	American Public Health Assn., southern branch, Memphis, Tenn.

MAY

15–20	National Tuberculosis Assn., Statler and Biltmore Hotels, Los Angeles, Calif.

JUNE

9–12	American Therapeutic Society, Barcelona Hotel, Miami Beach, Fla.
11–12	American Diabetes Assn., Inc., Hotel Deauville, Miami Beach, Fla.

AUGUST

14–19	American Pharmaceutical Assn. annual convention, Washington, D.C.
27–Sept. 1	American Hospital Assn., Civic Auditorium, San Francisco, Calif.

INTERNATIONAL

1960

MAY

2–11	Pan American Medical Assn. Congress, Mexico, D.F., Mexico (Section on Pharmacology and New Drugs, J. C. Munch, Secretary)

AUGUST

28–Sept. 2	18th General Assembly of International Pharmaceutical Federation, Copenhagen, Denmark

NOVEMBER

13–19	5th Pan-American Congress of Pharmacy and Biochemistry, Santiago, Chile

Letters

public relations display

Sir:

The Public Relations Display that you sent to New York City for use in the Pharmacy Booth at the American Podiatry Association convention was a huge success.

Our booth won an award as one of the outstanding booths in the Hall of Science. Your display was used as the centerpiece of the booth.

Your help was greatly appreciated.

Dr. R. E. Owens, Chairman
Committee on Pharmaceuticals
American Podiatry Association
National Association of Chiropodists
Oklahoma City, Oklahoma

[**Editor's Note:** The Public Relations window display units are available at $4.90 each postpaid from APhA.]

army placement

Sir:

I received your letter today telling me that Colonel Arnold had assured you that he was in the process of following through our previous request to have me put in a central group in the Army Reserve.

I received a letter from the 343d General Hospital informing me that Colonel Kidder had gotten in touch with them concerning my being placed in a central group.

I am writing this letter to express my appreciation to you, your office, Colonel Arnold and all those concerned with helping me with this problem. I must admit I have been greatly impressed with the way the American Pharmaceutical Association is finally being able to truly represent the pharmaceutical profession.

Robert Wolfson
West Babylon, L.I., New York

Federal and State Actions

FDA Actions

Illegal Over-the-Counter Sales for the Month of August

Indiana—Harry P. Ochstein, pharmacist, dba Avenue Pharmacy, Hammond—Selling amphetamine, barbiturates, and hormones without physician's authorization. Fined $300, plus $51.10 costs, one-year jail sentence suspended.

Michigan—Otto Racette, pharmacist, Sam's Drugs, Auburn Heights—Selling amphetamine and a hormone without physician's prescription. Defendant found not guilty.

New York—Max Rimer, pharmacist, dba Majestic Pharmacy, Bronx—Refilling prescriptions and selling antibiotics, amphetamine, and barbiturates without physician's authorization. Fined $150, placed on one-day probation.

Martin Wolfson, t/a Perry Hill Pharmacy, New York—Refilling prescriptions and selling antibiotics, tranquilizers, amphetamine, and hormones without physician's authorization. Fined $600.

Oklahoma—Fern S. Wythe, t/a Wythe Drug Store # 1, Oklahoma City—Refilling barbiturate prescription and selling sulfonamide without physician's authorization. Placed on five years' probation.

Tennessee—Sharp's Drug Store No. 3, Inc., and Thomas O. Day, Jr., Knoxville—Selling amphetamine, barbiturates, and tranquilizers without prescription. Firm fined $400; Day, $500.

Texas—Marvin M. Wellborn, pharmacist, MacGregor Pharmacy, Houston—Selling sulfonamides, tranquilizers, and cortisone without doctor's authorization. Fined $100. (Reported in July as deferred sentence.)

Misbranded Drugs

New York—Almo Products Corp., Aaron DeZure, president, Morris Gropper, vice-president, William Newman, secretary-treasurer, New York—False and misleading therapeutic claims made for Wonda Stone, foot balm, and mineral foot bath. Corporation fined $500; Newman, $400.

FTC Dismisses Charge

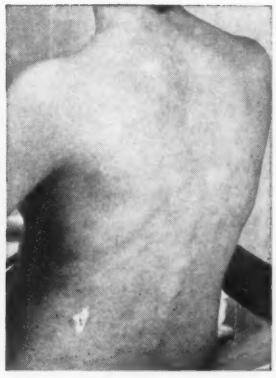
The Federal Trade Commission has announced dismissal of its false advertising charges against Union Pharmaceutical Company, Bloomfield, New Jersey, formerly manufacturer of "Saraka," a laxative. Typical charges in FTC's complaint, issued September 12, 1958, were that television commercials misrepresented that Saraka is an effective treatment for constipation and will rejuvenate lazy intestinal muscles.

The company's ground for dismissal was that it stopped making and distributing Saraka, as well as all other products, before the complaint was issued. Following a hearing on the motion, its counsel forwarded a certified copy of the dissolution certificate.

Typical case studies convincingly portray the therapeutic action of

MAZON OINTMENT and MAZON SOAP

Psoriasis — duration 5 years



After 7 weeks treatment

for ECZEMA PSORIASIS ATHLETE'S FOOT and other skin disorders

MAZON — has the widest sphere of application in the treatment of skin diseases and is comfortingly free from side re-actions.

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MAZON — differs radically from all other preparations due to its rapid absorption.

•

Physicians have proved to their own satisfaction the unusual effectiveness of Mazon. *We invite you to try the MAZON dual therapy.*

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The Association extends a cordial welcome to the following men and women who were accepted for active membership during the month preceding preparation of this issue.

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William T. Hendry, Jr., Mobile
Mrs. Sandra M. Walker, Montgomery

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Gene M. Palmquist, Glendale
Glenn E. Parton, Phoenix
Keith M. Valesh, Phoenix

ARKANSAS

A. F. Peters, El Dorado

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Nat Lippman, Los Angeles
Robert A. Magnet, Norwalk
Frederick Minardi, Granada Hills
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Harry Swatsburg, Norwich
Carl H. Vogel, Norwalk

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Owen DeVilbiss, Waukegan
Elmer G. King, Kankakee
Alfred F. Marton, Chicago
Paul G. McGlothing, Gurnee
Paul E. Neumann, Aurora
J. L. Slais, Chicago
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Roger H. Chester, Elkhart
Chase Derbyshire, Princeton
John M. Fose, Indianapolis
John P. Gault, South Bend
Lloyd T. Johnson, Elkhart
Troy L. Kerley, Indianapolis
Ralph E. Monteith, Indianapolis
John P. Murphy, Elkhart
Richard B. Murray, Evansville
Albert W. Schoettlin, Evansville
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Mrs. Annette M. Greger, Marshalltown
A. L. Offerman, Davenport
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Lee Phelps, Stockton

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Charles E. Roth, Louisville
Julius T. Toll, South Fort Mitchell

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Redfield Bryan, Baton Rouge
Carroll E. Mooney, New Orleans
Paul R. Voss, Pineville
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Louis J. Strasburger, Elizabeth
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Alston L. Voorhees, Netcong
Arthur H. West, Jr., Florham Park
John H. Wood, Hillside
David Zarulove, Lake Parsippany

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Armando Boschetti, Massapequa
Eugene R. Clark, Wilson
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Nicholas T. Consilvio, Mount Vernon
Nicholas S. Dardano, Utica
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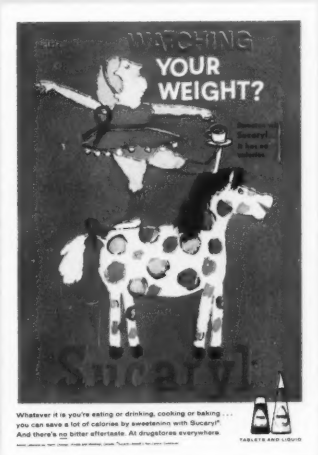
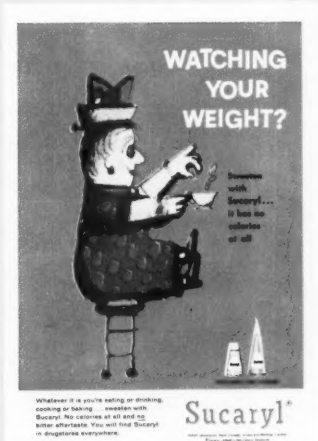
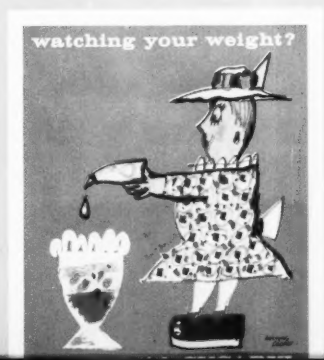
Horst W. Schmank, Chattanooga

Sucaryl
Whatever it is you're eating or drinking, cooking or baking . . . you can save a lot of calories by sweetening with Sucaryl®. And there's no bitter aftertaste. At drugstores everywhere.
TABLETS AND LIQUID


WATCHING YOUR WEIGHT?
Sucaryl
Whatever it is you're eating or drinking, cooking or baking . . . you can save a lot of calories by sweetening with Sucaryl®. And there's no bitter aftertaste. At drugstores everywhere.
TABLETS AND LIQUID


WATCHING YOUR WEIGHT?
Whatever it is you're eating or drinking, cooking or baking . . . sweeten with Sucaryl. No calories at all and no bitter aftertaste. You will find Sucaryl in drugstores everywhere.
Sucaryl®



Sweet news for (FALL) '59!

—a continuing saga—

For some little while now you've been seeing Sucaryl consumer ads along the lines of those you see here. With their bright, splashy poster colors, they've been real attention-getters wherever they've appeared. (And they've appeared in some pretty impressive publications – Good Housekeeping, McCall's, Ladies' Home Journal, magazines noted for the influence they exert on weight-watching housewives. Of course, this is not to mention the big-circulation Sunday supplements, Parade and This Week.)

Sucaryl has a lot more of this kind of advertising on tap for the coming weeks so be prepared to put the push behind it at the local level. Prominent store display plus neighborhood promotion can mean a lot towards boosting your Sucaryl sales.

Sucaryl® NON-CALORIC SWEETENER, ABBOTT

909045

Whatever it is you're eating or drinking, cooking or baking, you can save a lot of calories by sweetening with Sucaryl. And there's no bitter aftertaste. At drugstores everywhere.

Abbott Laboratories, North Chicago, Illinois and Montreal, Canada. ®Sucaryl—Abbott's Non-Caloric Sweetener

TABLETS AND LIQUID

Who ever thought vitamins could taste so good?

Who ever saw a vitamin line-up like this?

First, golden VI-DAYLIN came in bottles. Then came the colorful "Pressure-Pak" to make it even more interesting to "won't takers." And now VI-DAYLIN DULCETS® that kids can chew like candy. Same potency (just one DULCET a day) . . . same price per dose . . . same delightful lemon candy flavor. Bottles of 30 and 100, packed three 100's and eight 30's in each attractive display carton (List No. 6946). Also regular VI-DAYLIN (List No. 3606) in 3-fl.oz., 8-fl.oz. and pint bottles and in the 12-fl.oz. "Pressure-Pak".

Keep your VI-DAYLIN line out where Mom and the kids can see. There's a form for everyone. VITAMINS BY ABBOTT—SOLD ONLY IN PHARMACIES BY PHARMACISTS.

ABBOTT

VI-DAYLIN® *Liquid*

VI-DAYLIN *"Pressure Pak"*

and now, NEW **VI-DAYLIN** DULCET® TABLETS

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®VI-DAYLIN—Vitamins A, D, B_1, B_2, B_6, B_{12}, C and Nicotinamide, Abbott. ®DULCET—Sugar Tablets, Abbott.

908046

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Max Rosen, Houston
Mrs. Alvis N. Wood, Lorenzo

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Leonard G. Parks, Bennington

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Ralph D. Arnold, Annandale
Mr. Ola H. Bain, Alexandria
Billy J. Bray, Charlottesville
Aubrey R. Cahoon, Portsmouth
Harold P. Gibb, Jr., Richmond
Robert W. Jennings, Falls Church
Roy W. Knowlton, Fairfax
James T. Moore, Norfolk
Harold L. Pearson, Lynchburg
James W. Skinner, Arlington
Luke M. Stephens, Triangle

WASHINGTON

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Robert J. Grady, Jr., Tacoma
Esther Ann Madden, Seattle
James Leslie Terrill, Seattle

WEST VIRGINIA

Richard C. Egelston, Martinsburg

WISCONSIN

Merton C. Finger, Sheboygan
Arnold H. Tucker, Park Falls

INTERNATIONAL

Simpson Waverman, Toronto, Canada
Minoru Mizuno, Higash-Ku, Nagoya, Japan
Raphet R. Echevarria, San Sebastian, Puerto Rico
Luis A. Vazquez, Ponce, Puerto Rico

Obituaries

Sister Mary Junilla Haskell, pharmacist at St. Francis Hospital, Santa Barbara, died August 26, one week after having been presented with the annual award for historical writing in hospital pharmacy by the American Institute of the History of Pharmacy (*see page* **563**). She would have been 60 years old on September 22. Born in 1899, Sister Mary Junilla joined the order of St. Francis in 1918. A pharmacist by profession, she was co-founder of the National Catholic Pharmacist Guild and held memberships in several pharmaceutical associations including APhA. She also served for many years as chief pharmacist at the Queen of Angels Hospital in Los Angeles. Sister Junilla was nationally recognized as a composer and poet and she composed the words and music for "The Apothecary's Prayer" and "My Hands," the latter dedicated to physicians. Her poem, "The Nurse's Prayer," is world famous.

J. Robert Cathcart, 42, former chief pharmacist at the Delaware Hospital and one of the founders of the Delaware Poison Information Service, was killed August 29 when his station wagon swerved out of control and struck a house in Tamaqua, Pennsylvania. Killed with him were his wife Anna and her father. The Cathcarts had gone to Tamaqua to pick up their three children who were vacationing with their grandparents. According to police, Cathcart swerved to avoid hitting a dog, lost control of his car, smashed through a two-foot stone wall and into a home. He headed the committee on household and economic poisons for the American Society of Hospital Pharmacists in 1958–59 and was chief pharmacist at the Delaware Hospital from 1950 until 1959. At the time of his death he was associated with the Maida Pharmacy of Wilmington.

Deceased

Chester E. Jones, Jackson, Mississippi
Edward J. Kaniak, St. Petersburg, Florida
Charles H. Schaefer (Life Member), Ft. Myers Beach, Florida
Maurice B. Skelton, Champaign, Illinois

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New Stock No.	Former Stock No.	Size	Box of 6
4126	3687	1" x 36"	$1.42
4146	3667	3" x 18"	1.64
4156	3657	3" x 36"	2.21
4166	3677	6" x 36"	3.64
4116	3697	½" x 72" (Selvage-Edged Packing)	2.94

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1959–60 Committees

List of newly appointed committees of APhA and of Council. Unless otherwise indicated; terms expire at conclusion of the 107th annual meeting.

Association Committees

Appointed by President Howard C. Newton and confirmed by the Council.

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Chairman: George F. Archambault, Bethesda, Md.
Troy C. Daniels, San Francisco, Calif.
H. A. B. Dunning, Baltimore, Md.
Robert P. Fischelis, Washington, D.C.
Robert A. Hardt, Chicago, Ill.
C. F. Lanwermeyer, Waukeegan, Ill.
C. J. Masterson, Oklahoma City, Okla.
R. V. Robertson, Spokane, Wash.
Glenn Sonnedecker, Madison, Wis.

Committee on Student Branches

Chairman: Lyman D. Fonda, Brooklyn, N.Y.
Martin Barr, Philadelphia, Pa.
Francis C. Hammerness, Boulder, Colo.
Frank L. Mercer, St. Louis, Mo.
Milton L. Neuroth, Richmond, Va.
Charles C. Rabe, Tarrytown, N.Y.
Ewart A. Swinyard, Salt Lake City, Utah

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Chairman: Noel E. Foss, Baltimore, Md.
John E. Donaldson, Washington, D.C.
Ralph M. Ware, Jr., Richmond, Va.

Committee on U.S. Pharmacopeia

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Noel M. Ferguson, Houston, Texas (1960)
F. O. Taylor, South Ft. Mitchell, Ky. (1961)
L. F. Tice, Philadelphia, Pa. (1961)
H. M. Burlage, Austin, Texas (1962)
Louis C. Zopf, Iowa City, Iowa (1962)
Alvah G. Hall, Los Angeles, Calif. (1963)
Lloyd M. Parks, Columbus, Ohio (1963)
Salvatore J. Greco, Omaha, Neb. (1964)
H. W. Youngken, Jr., Kingston, R.I. (1964)

Committee on Pharmaceutical Research

Chairman: Donald C. Brodie, San Francisco, Calif. (1964)
Lewis W. Rowe, Clearwater, Fla. (1960)
H. W. Youngken, Jr., Kingston, R.I. (1960)
J. E. Christian, Lafayette, Ind. (1961)
R. A. Deno, Ann Arbor, Mich. (1961)
Rudolph H. Blythe, Philadelphia, Pa. (1962)
George P. Hager, Minneapolis, Minn. (1962)
W. R. Brewer, Tucson, Ariz. (1963)
Earl P. Guth, Columbus, Ohio (1963)
Noel E. Foss, Baltimore, Md. (1964)

Associate Members:

William S. Apple, Washington, D.C.
Martin Barr, Philadelphia, Pa.
Lloyd C. Miller, New York, N.Y.
Justin L. Powers, Washington, D.C.
Hugo H. Schaefer, Yonkers, N.Y.

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A. N. Sorenson, Detroit, Mich.

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Lyman D. Fonda, Brooklyn, N.Y.
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Benjamin A. Smith, Indianapolis, Ind.
Barnard Thompson, Detroit, Mich.

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Melvin W. Green, St. Charles, Ill.
Robert A. Hardt, Chicago, Ill.
John B. Heinz, Salt Lake City, Utah
Leonard J. Piccoli, Riverdale, N.Y.
Justin L. Powers, Washington, D.C.

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This Committee consists of three representatives from each of the following organizations: APhA; NARD; AACP.

APhA Representatives:

Chairman: F. Royce Franzoni, Washington, D. C.
Grover C. Bowles, Memphis, Tenn.
Roger D. Brown, Richmond, Va.

Committee on Ebert Prize

Chairman: Joseph V. Swintosky, Philadelphia, Pa.
Willis R. Brewer, Tucson, Ariz.
John J. Eiler, San Francisco, Calif.
Ole Gisvold, Minneapolis, Minn.
Tom S. Miya, Lafayette, Ind.
Justin L. Powers, Washington, D.C.

Committee on Kilmer Prize

Chairman: Egil Ramstad, Lafayette, Ind.
Marin S. Dunn, Philadelphia, Pa.
V. E. Tyler, Jr., Seattle, Wash.

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Richard A. Deno, Ann Arbor, Mich. (1960)
W. Arthur Purdum, Baltimore, Md. (1960)
Charles L. Brown, Jersey City, N.J.
George M. Hocking, Auburn, Ala. (1961)
Ward J. Rice, Indianapolis, Ind. (1962)
Hugo H. Schaefer, Yonkers, N.Y. (1962)
John J. Dugan, New Haven, Conn. (1963)
J. B. Fullerton, Kalamazoo, Mich. (1963)
Ex officio: S. W. Goldstein, Washington, D.C.

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Henry H Gregg, Minneapolis, Minn.
Leonard F. Tibbetts, Arlington, Mass.
Vernon O. Trygstad, Washington, D.C.

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This committee consists of the secretary of the Association (*Chairman*); the secretaries of the local branches; the secretary of the American Society of Hospital Pharmacists and the secretary of the American College of Apothecaries.

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Grover C. Bowles, Memphis, Tenn.
Louis E. Kazin, New York City, N.Y.
Joseph D. McEvilla, Pittsburgh, Pa.
Paul C. Olsen, Brooklyn, N.Y.
Irving Rubin, Brooklyn, N.Y.
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Milton Heller, Washington, D.C.
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Paul A. Pumpian, Milwaukee, Wis
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Henry H Gregg, Minneapolis, Minn.
James H. Kidder, Washington, D.C.
Frederick D. Lascoff, New York, N.Y.
George L. Scharringhausen, Jr., Park Ridge, Ill.

The president has appointed the secretary an ex officio member of all committees of the ASSOCIATION.

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Appointed by Council Chairman George F. Archambault and confirmed by the Council.

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Chairman: Howard C. Newton, Boston, Mass.
William S. Apple, Washington, D.C.
George F. Archambault, Bethesda, Md.
J. Warren Lansdowne, Indianapolis, Ind.
Hugo H. Schaefer, Yonkers, N.Y.

Committee on Resources and Planning

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William S. Apple, Washington, D.C.
Grover C. Bowles, Memphis, Tenn.
Louis J. Fischl, Oakland, Calif.
John A. MacCartney, Detroit, Mich.

Committee on Budget

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John A. MacCartney, Detroit, Mich.
Hugo H. Schaefer, Yonkers, N.Y.

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Hugo H. Schaefer, Yonkers, N.Y.

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Grover C. Bowles, Memphis, Tenn.
J. Warren Lansdowne, Indianapolis, Ind.
Hugo H. Schaefer, Yonkers, N.Y.

Special Committees

Committee on Exhibits

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William S. Apple, Washington, D.C.
Roy A. Bowers, Newark, N.J.
J. Warren Lansdowne, Indianapolis, Ind.

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This Committee consists of two representatives from APhA; one representative from AHA; one representative from CHA; and four representatives from ASHP

APhA Representatives:

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Robert P. Fischelis, Washington, D.C.

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William S. Apple, Washington, D.C.
George F. Archambault, Bethesda, Md.
Robert P. Fischelis, Washington, D.C.
F. Royce Franzoni, Arlington, Va.
Hugo H. Schaefer, Yonkers, N.Y.
Paul W. Wilcox, West Point, Pa.

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appointments to committees

The following appointments have been made for the ensuing year—**Historian:** Mrs. Earl Serles, Brookings, S.D.; **Parlementarian:** Mrs. Gilbert Fletcher, Ann Arbor, Mich.; **Student Loan Fund Committee:** Mrs. George P. Hager, Swarthmore, Pa.; Mrs. George Webster, Wilmette, Ill.; Mrs. Lloyd Parks (*chairman*), Columbus, O.; **Pharmacy Student Wives Clubs:** Mrs. Elmer Plein, Seattle, Wash.; Mrs. Louis Zopf, Iowa City, Ia.; Mrs. W. D. Strother, Weatherford, Okla.; Mrs. Charles Poe (*chairman*), Boulder, Colo.; **Ladies Lounge:** Mrs. Andrew DuMez, Baltimore, Md.; Mrs. William Apple, Washington, D.C.; Dr. B. Olive Cole (*chairman*), Baltimore, Md; **Hugh Mercer Apothecary Shop:** all Auxiliary members in area serve on this committee, Miss Amelia DeDominicis and Mrs. Andrew DuMez (*co-chairmen*), Baltimore, Md.; **Local Branches:** Mrs. Lee Worrell, Ann Arbor, Mich.; Mrs. David O'Day, Laramie, Wyo.; Mrs. Troy Daniels, San Francisco, Calif.; Dr. N. Marie Huntington (*chairman*), Pocatello, Ida.; **Constitution and By-Laws:** Mrs. Hugo Schaefer, Yonkers, N.Y.; Mrs. Louis Busse, Madison, Wis.; Mrs. Bryl Benton, Des Moines, Ia.; Mrs. Frank Eby, Springfield, Pa.; Mrs. Geo. Scharringhausen (*chairman*), Park Ridge, Ill. **Nomination:** Mrs. Fabian Maurina, Detroit, Mich.; Mrs. L. David Hiner, Salt Lake City, Utah; Mrs. Lyman Fonda, Milburn, N.J.; Mrs. Charles Evans (*chairman*), Warrenton, Ga.

new members

As always we welcome with pleasure and are proud to present to the membership the following new members:

From Alabama: Mmes. L. S. Blake, S. T. Coker, G. W. Hargreaves, George Hocking, Joe Rash, B. B. Williams—all of Auburn.

From Arkansas: Mmes. Harold Crall (Jonesboro), A. Peters (Eldorado).

From California: Mmes. Jack S. Heard (Woodland Hills), Charles Towne (Los Angeles).

From District of Columbia: Mrs. Edward Feldmann.

From Georgia: Mrs. O. M. Littlejohn (Decatur).

From Illinois: Mrs. Daniel A. Ravegnani, (Manteno).

From Indiana: Mmes. Cecil Headlee, F. C. Hecker—both of Indianapolis, O. E. Hinshaw (Elwood), R. V. Evanson (Lafayette), Lester Baughman (South Bend).

From Louisiana: Mrs. Lawrence F. Gerring (New Orleans).

From Massachusetts: Mrs. Thomas A. Brady (Peabody).

From Michigan: Mmes. Robert L. Ravis (Ann Arbor), Barnard Thompson (Detroit), Fred Armstrong (Grosse Pointe Woods), Bert C. Brennan (Saginaw), Robert J. Gillespie (St. Joseph).

From Mississippi: Mmes. Austin A. Dodge, W. Lewis Nobles—both of Oxford.

From New Jersey: Mmes. E. Leventhal (Bayonne), Herman Leitzon (Upper Montclair), Z. M. Szalay (Perth Amboy), John L. Voight (Verona).

From New York: Mmes. Raymond Klebes (Bolton Landing), H. R. Reimen (Buffalo).

From Ohio: Mmes. Fred J. Bandelin (Lyndhurst), Thomas B. King, Harry W. Moeller—both of Cincinnati, George F. Welde (Portsmouth), W. O. Rowland (Akron).

From Pennsylvania: Mmes. L. Paul Sinotte (North Wales), Max Miller (Camp Hill).

(Continued on page 621)

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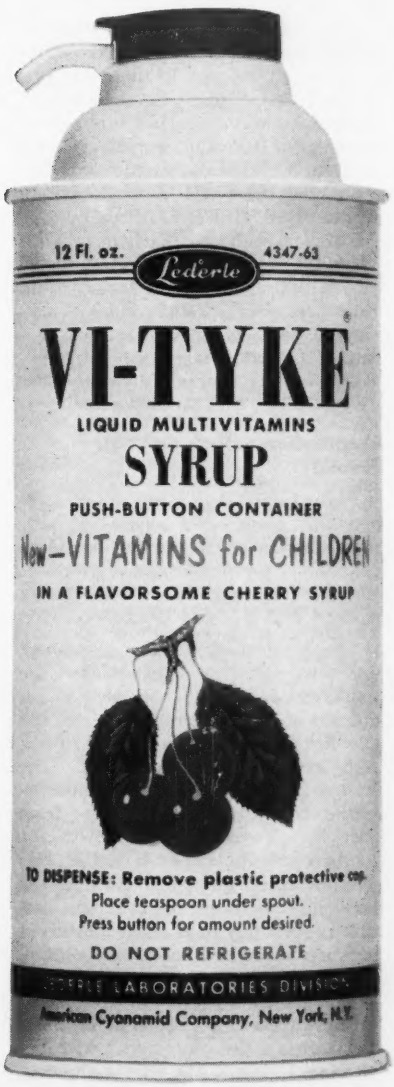

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Prescription Practice *by Samuel W. Goldstein*

℞ *Information Service*

Aluminum Methionate

A formula for a perspiration-resistant make-up base [see THIS JOURNAL, **20,** *402 (July, 1959)] included aluminum methionate as a nonirritating antiperspirant. How can we obtain this compound?—D.P., New York.*

Aluminum methionate was not available commercially, but was prepared by the authors of the above-cited report by the following procedure: "Dissolve 100 Gm. of calcium methionate in 250 ml. of warm distilled water. Dissolve 102 Gm. of aluminum sulfate in 250 ml. of warm distilled water and mix the two solutions. Let stand for ten minutes. Calcium sulfate precipitates and is filtered off. Allow the filtered solution to stand overnight and re-filter it. Concentrate this solution to about half its original volume in a flash evaporator and add ethyl alcohol to the concentrate. The aluminum methionate is precipitated in the form of crystals and can be filtered off and dried."

Bretylium Tolysate

We have a request for information on a drug named Bretylium used for hypertension. Can you help us?—B.Y., Maryland.

Bretylium tolysate (N-*o*-bromobenzyl-N-ethyl-N,N-dimethylammonium *p*-toluenesulfonate) is a benzyl quaternary ammonium compound developed by the Wellcome Research Labs. and, since September 7, has been marketed under the trade name Darenthin by Burroughs Wellcome & Co. (London) for use in the treatment of hypertension. It is stated to act by sympathetic inhibition. It is supplied in scored tablets of 200 mg.

Cantharidin—Source

A physician wishes to use the following Rx: Cantharidin 0.7%, Acetone and Collodion aa. q.s. This excludes the use of cantharides tincture due to its vehicle and cantharides would be unsatisfactory due to its bulk. Can you help us?—C.W.W., Illinois.

Cantharidin is listed in the catalog of K & K Laboratories, Inc., 177–10 93rd Ave., Jamaica 33, N.Y. The powder can be dissolved in the acetone and the collodion then added. The preparation would be about double the strength (in cantharidin) of cantharidal collodion USP IX.

Citrate Buffer pH 5

See THIS JOURNAL, **20,** *159, 414 (July, 1959), on physostigmine salicylate ophthalmic solution buffered at pH 5 with the equivalent of 2% disodium hydrogen citrate sesquihydrate.*

L.K. notes that the British Pharmacopoeia method for obtaining disodium hydrogen citrate may be unduly laborious and that there is no difference in solution between $3Na_2HCit$ and a combination of $2Na_3Cit + 1H_3Cit$. He suggests: "To make a 'pH 5 buffer' containing 2% Na_2HCit, use: sodium citrate, USP ($C_6H_5Na_3O_7 \cdot 2H_2O$), 1.66 Gm.; citric acid, USP ($C_6H_8O_7$, anhyd.), 0.54 Gm.; water for injection, USP *q.s. ad* 100 ml. If the monohydrate citric acid, USP ($C_6H_8O_7 \cdot H_2O$) is employed, 0.59 Gm. should be used. Of course, the materials weigh slightly over 2 Gm. because waters of hydration are weighed along with the compounds."

Magnesium Sulfate Solution—Stability

Please suggest the best way to store large quantities of saturated solution of magnesium sulfate at room temperature without getting a precipitate, fungus growth, or otherwise becoming cloudy with foreign matter.—R.L.W., New Mexico.

The problem of stability with most saturated solutions demands that the solubility must not be exceeded by reduction of the temperature below that at which the clear solution is first stored, or by evaporation of the solvent. The storage container and closure must be sterile, chemically inert and free from particles. To avoid fungus growth, the solution must be sterilized and/or contain an antifungal agent such as the parabens. It would appear, therefore, that the best way to store the solution in question would be to prepare a solution that would meet the requirements of magnesium sulfate injection N.F.; sterilize by autoclaving or bacterial filtration, and store in sealed containers, preferably of Type I glass. The size of the containers should be governed by the intended use of the solution to permit the removal of the entire contents for each application.

Menthol-Camphor in Powder

Is there a preferred method of compounding the following Rx:

Menthol	*gr. 20*
Camphor	*gr. 25*
Salicylic Acid	*gr. 30*
Boric Acid Powder	*drams 6*
Talc q.s.	*ounces 4*

Is it preferred to liquify the menthol-camphor and use the powders to absorb the liquid, or should the menthol and camphor be rubbed up separately with the powders?—S.B., New York.

The only way in which your compounding question can be answered is to state that the "preferred method of compounding" a nonofficial preparation depends upon the personal preference of the compounder. He would take into consideration the convenience of his procedure, the quality of his product, and its acceptance by the physician and the patient. The procedure for Boric Acid and Talc Dusting Powder with Menthol and Thymol, "The Pharmaceutical Recipe Book," 3rd ed., page 179, directs that the menthol, thymol, and oil of rose geranium in this product should be mixed with a portion of the purified talc, after which the boric acid and the remainder of the talc is added and the mixture is sieved.

Suby's Solution—Modified

See THIS JOURNAL, **20,** *471 (August 1959), for note on Suby's Solution with formula from a British hospital pharmacist.*

An American hospital pharmacist (J.C.C., New York) calls attention to the formula for sterile magnesium and sodium citrates solution in the Am. Hospital Formulary Service which includes 4.4 Gm. anhydrous sodium carbonate instead of 8.8 Gm. sodium bicarbonate and designates light instead of heavy magnesium oxide. He notes also that the formula used widely in American hospitals yields a lower pH. This information is correct. We might point out, however, that the formula given in the quoted Formulary Service is for Suby-Albright solution G; while the formula published in the August issue of THIS JOURNAL is for Suby's Solution.

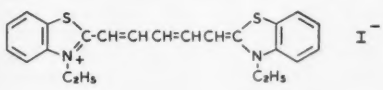
Prescription Practice

New and Nonofficial Drugs

The following descriptions of drugs are based upon available evidence and do not in any case imply endorsement by the American Medical Association Council on Drugs.

Dithiazanine Iodide

Abminthic (Pfizer), **Delvex** (Lilly). —3 Ethyl-2-[5-(3-ethyl-2-benzothiozolinylidene)-1,3 pentadienyl]benzothiazolium iodide.



Actions and Uses. Dithiazanine iodide, introduced commercially in 1958, is a blue cyanine dye which is used clinically as an anthelmintic. The drug possesses an amidinium ion system, a distinctive chemical configuration characterized by a quaternary nitrogen separated from a tertiary nitrogen by a resonating or conjugated carbon chain of alternate double and single bonds; this resonating amidinium ion system is apparently essential for anthelmintic activity. Cyanine dyes as a class are sparingly soluble and poorly absorbed from the gastrointestinal tract. The high levels in the intestine after oral administration of dithiazanine exert an inhibitory effect on the anaerobic metabolic reactions of certain intestinal helminths, thereby producing a chemotherapeutic effect against susceptible parasites.

Dithiazanine is highly active against *Trichuris trichiura* (whipworms) and *Strongyloides stercoralis*. Cure rates ranging from 72 to 100 per cent have been reported in trichuriasis and from 62 to 100 per cent in strongyloidiasis. The drug is far more effective than previous modes of therapy in either of these worm infestations, i.e., hexylresorcinol retention enemas for Trichuris organisms and intravenously administered gentian violet for Strongyloides infections. In responsive patients, therapy with dithiazanine effects a cure rather than merely removing most of the worms. Hence, it is considered the drug of choice for the treatment of trichuriasis and strongyloidiasis.

Dithiazanine is about as effective as piperazine for the treatment of pinworms (*Enterobius vermicularis*) and roundworms (*Ascaris lumbricoides*). Since the use of dithiazanine is associated with a much higher incidence of gastrointestinal side-effects than is therapy with piperazine, the latter agent is considered preferable for these infestations. Therapy with dithiazanine for pinworms or roundworms should be reserved for those patients in whom a course of treatment with piperazine has failed to eradicate the parasites. However, dithiazanine should prove to be highly useful as a single agent for the treatment of multiple worm infections, such as ascariasis and trichuriasis, which frequently occur in the same patient.

Dithiazanine, used either alone or in combination with tetrachloroethylene, has been tried for the treatment of hookworm infections due to *Necator Americanus*. Although the preliminary clinical trials have suggested some degree of chemotherapeutic effectiveness, the drug appears to be inferior to tetrachloroethylene for this purpose. Hence, its use in hookworm infections is considered experimental. There is, likewise, inadequate evidence to establish the usefulness of dithiazanine in dwarf tapeworm (*Hymenolepis nana*) parasitism.

Serious toxicity has not been encountered during the clinical trials of dithiazanine, an effect attributable to its almost complete lack of absorption from the gastrointestinal tract. The drug does, however, exert a local irritant effect on the gastrointestinal mucosa. Thus, nausea, vomiting, and anorexia occur frequently; abdominal cramps and diarrhea may also be encountered. For this reason, the drug is probably best administered with meals. Since cyanine dyes as a class are highly toxic when given parenterally, dithiazanine should not be given in any condition in which its gastrointestinal absorption might conceivably take place. In view of past experience that other cyanine dyes can cause kidney damage, dithiazanine should be used cautiously in patients with renal disease. The drug is obviously contraindicated in any condition that may be aggravated by vomiting.

Dosage. Dithiazanine iodide is administered orally. The optimal daily dose is 45 mg. per kilogram of body weight (20 mg. per pound) with a maximum daily dosage of 600 mg., administered in three divided doses, for five to ten days in trichuriasis, for five days in ascariasis and enterobiasis, and for seven to 21 days in strongyloidiasis.

Preparations: tablets 50, 100 and 200 mg.

Vancomycin Hydrochloride

Vancocin (Lilly).—The HCl salt of an antibiotic substance obtained from strains of *Streptomyces orientalis*. The structural formula of vancomycin hydrochloride has not been determined.

Actions and Uses. Vancomycin HCl, introduced in 1958, is an antibiotic which is highly active against Gram-positive cocci. The drug is bactericidal, *in vitro* and *in vivo*, for streptococci, pneumococci and staphylococci. Vancomycin is excreted in the urine; its metabolic fate and distribution are not known.

Vancomycin HCl administered intravenously has proved to be valuable for the treatment of certain severe staphylococcic infections. In a number of instances it has undoubtedly been lifesaving. The drug is not intended for routine use nor should it be used in mild infections. Instead it should be reserved for critically ill patients with life-endangering infections produced by strains of staphylococci which are resistant to the antimicrobial action of the commonly used antibiotics. Because of the specificity of vancomycin against such infections, it is particularly valuable for use in hospitals in which so-called antibiotic-resistant staphylococcic infections are becoming an increasingly serious problem. To date, no instance of natural or acquired staphylococcic resistance to vancomycin has been reported, either *in vitro* or *in vivo*. Neither has cross resistance to other antibiotics been observed. If, in the light of subsequent clinical experience, all strains of the organism remain uniformly susceptible to vancomycin, this antibiotic may well become the drug of choice for the treatment of severe staphylococcic infections which fail to respond to other antibiotics. The indiscriminate use of vancomycin is, in large measure, discouraged by the fact that it must be administered intravenously.

Vancomycin HCl has also been used in the treatment of severe infections produced by penicillin-resistant strains of alpha or nonhemolytic streptococci. In a number of patients with subacute bacterial endocarditis due to such organisms, the drug has produced gratifying results. There appears to be little justification for its use in beta hemolytic streptococcic or pneumococcic infections since these invariably respond well to therapy with penicillin.

The toxicity of vancomycin HCl is minimal for most short-term therapy. The drug can, however, produce an impairment of auditory acuity, especially when therapy is prolonged or when large doses are given. In the presence of severely impaired renal function, the excretion of vancomycin is decreased and the drug accumulates in the blood. Since this may enhance the likelihood of ottoxicity, the drug should be used with considerable caution in patients who have renal damage. Periodic determinations of the blood urea nitrogen level are likewise suggested for all patients receiving doses greater than two Gm. per day. Vancomycin HCl is irritating to the venous endothelium and may cause pain at the site of intravenous injection; chemical thrombophlebitis has been observed when concentrated solutions were used or when the drug was administered repeatedly into the same vein. Macular skin rashes and febrile reactions have been encountered.

Dosage. Vancomycin HCl is administered only by the intravenous route. For adults the usual dose for a 24-hour period

is two Gm. This is generally administered in amounts of 500 mg. every six hours, although some investigators have found it feasible to give only two infusions of one Gm. each at 12-hour intervals. Higher doses of three to four Gm. daily should be used only in desperately ill patients who have normal renal function. The daily dosage for children is 20 mg. per kilogram of body weight.

Concentrated solutions of the drug, containing 500 mg. in 10 cc., can be given by direct i.v. injection over a period of four to five minutes. Preferably, however, this concentrated solution should be diluted with 100 to 200 cc. of isotonic sodium chloride solution or five per cent dextrose in water for injection and infused by i.v. drip over a period of 20 to 30 minutes.

Preparations: solution (injection) 500 mg. in 10 cc.

Tuberculosis Vaccine

Tuberculosis Vaccine; BCG vaccine; Bacillus Calmette-Guérin vaccine.—A freeze-dried preparation of the culture of an attenuated strain of bovine tubercle bacillus, *Mycobacterium tuberculosis*, originally isolated by Calmette and Guérin. It is standardized in accordance with requirements of the National Institutes of Health.

Actions and Uses. Tuberculosis vaccine, first licensed for general distribution in 1950, is proposed for use as an immunizing agent in the prevention of tuberculosis. Its use for this purpose is based on the ability of the vaccine to induce a positive tuberculin skin test reaction in a high percentage of individuals who are initially nonreactive to such a test. Conversion of negative tuberculin-tested subjects to positive reactors after vaccination is generally regarded as presumptive evidence of the development of immunity similar to that which follows a naturally resisted or healed primary sensitizing infection. Accordingly, tuberculosis vaccine is intended for—and should be used only in—individuals initially nonreactive to tuberculin.

Evaluation of the effectiveness of tuberculosis vaccine is hampered by the fact that skin reactivity to tuberculin does not measure the degree of immunity or amount of resistance to the disease. Moreover, there is no suitable quantitative method, such as a humoral test for antibodies, by which this can be estimated. Studies comparing the incidence of tuberculosis between vaccinated and nonvaccinated population groups indicate that the effectiveness of the vaccine in the prevention of the disease ranges from 50 to 80 per cent, depending on the degree of exposure to active infection and other factors which influence susceptibility to the disease. Some authorities attribute variations in the results of vaccination to a lack of uniformity of the vaccine; others believe that a low degree of native resistance is associated with a correspondingly low response to vaccination. The duration of vaccine-converted tuberculin reaction varies according to age of the person. Most authorities agree that revaccination is advisable whenever tuberculin retesting shows that reversion to a negative reaction has occurred.

Indications for the use of tuberculosis vaccine are complicated by a lack of agreement concerning its importance in the over-all epidemiologic control of the disease. Some authorities believe that all tuberculin nonreactors, young and old, should be vaccinated and revaccinated as necessary to induce and maintain a tuberculin-positive state. Other authorities take the position that the vaccine does not produce a high degree of protection and its employment is of minor significance as compared to control programs designed to improve the general level of health, including case-finding and isolation, and early treatment of open cases of the disease. Still others, oppose widespread use of the vaccine because the artificial conversion to tuberculin-positive of large numbers of unexposed nonreactors vitiates the use of the tuberculin skin test as a diagnostic screening tool for early detection and treatment of infection; however, the claim is made that a differentiation between virulent infection or disease and vaccination can be established in a high percentage of cases. There is a large body of expert opinion which favors vaccination only for (1) children and adults considered to have inferior resistance and who reside in areas where the incidence of tuberculosis is high, (2) professional and other individuals whose work (as in hospitals) involves a high risk of exposure, (3) members of households unavoidably exposed to infectious cases in the home and (4) inmates and personnel of institutions in which tuberculosis is found to be prevalent. Thus, among individual nonreactors to tuberculin, physicians have a choice either of using the vaccine to reduce the risk of clinical disease or of not using the vaccine and having the tuberculin skin test for early diagnosis as as a guide to the need for further study and treatment.

Tuberculosis vaccine as presently standardized and distributed in the U. S. is considered to be relatively free from untoward effects. The freeze-dried preparation is regarded as relatively stable for a period of six months, if kept refrigerated at 4°–6° C., protected at all times against light, and used within two hours after resuspension. Local infection at the site of inoculation and/or regional lymphadenopathy may occur occasionally. Such reactions are considered more apt to follow the intradermal injection techique than the multiple puncture or scarification methods of inoculation. The vaccine is contraindicated in persons who have not been tested and found tuberculin-negative within the preceding two weeks, who are acutely ill or suspected of having a respiratory infection, who have received antibiotic medication within the past month, or who have an active skin disease. Tuberculin testing also is contraindicated in the presence of any acute illness, scabies, allergic dermatitis, or psoriasis; it is also contraindicated if a smallpox vaccination has been given within the previous month. The latter is significant because of the danger of cross infection between the sites of two similar types of vaccination.

Dosage. Tuberculosis vaccine is usually administered by multiple puncture or by intradermal injection. Because the vaccine is composed of viable organisms and contains no preservative, it must be handled in a sterile manner. Ethyl alcohol 70 per cent (undenatured) and/or acetone is used for cleansing of the site of the inoculation and the hands of the operator. Needles, syringes, or other equipment should be sterilized between each use by autoclaving, dry heat, or boiling water.

The dosage for adults and children is the same and is measured in drops of the resuspended vaccine (50 mg./cc.) for the multiple puncture method of inoculation. The vaccine is placed directly on the cleansed skin at the inoculation site, usually over the left deltoid region. The required number of drops for each inoculation depends on the gauge of the needle or other opening from which the vaccine is deposited on the skin: 22-gauge, four drops; 17-gauge, two drops; syringe without needle, one drop. When single-dose capillary tubes are used, the resuspended contents of one tube are used for each inoculation. The multiple puncture method can be carried out by means of a specially constructed disk which makes all punctures simultaneously, or with a needle used to make three rows of 10 separate punctures two mm. apart. After inoculation by multiple puncture the site is allowed to dry without dressing and should not be washed for 24 hours. For intradermal injection, one-tenth cc. (equivalent to two-tenths mg.) of the resuspended and further diluted vaccine is injected as superficially as possible with a tuberculin syringe and a 26-gauge needle so as to produce a wheal of 8–10 mm.

In screening candidates for vaccination, the tuberculin test is usually read after an interval of 48 to 72 hours. A tuberculin test read after 48 hours should be performed eight weeks after vaccination and at six months to yearly intervals thereafter. Vaccinated persons found to be nonreactive should be revaccinated within two weeks of a negative tuberculin test. A single dose of one-tenth mg. . (one-tenth cc. of a 1:1,000 dilution) of old tuberculin is used for the first eight-weeks test after vaccination. Subsequent retesting should be done with two test doses as follows: first, one-tenth mg. (one-tenth cc. of a 1:1,000 dilution) or two-hundredths mg. (one-tenth cc. of a 1:5,000 dilution) and if negative, then one mg. (one-tenth cc. of a 1:100 dilution).

The tuberculin-positive skin reaction usually induced by vaccination is less pronounced than that found in the presence of active disease. Induration is less marked and redness is less intense or absent. Accordingly, care must be taken in reading the test to palpate the actual site of injection. The proper site for testing is the upper third of the volar aspect of the forearm, preferably in a small hollow, and never over a muscle belly, tendon, or vein, so as not to obscure the detection of a positive induration. A reaction is considered positive when the area of induration equals or exceeds 6 mm. in any diameter.

Preparations: powder (freeze-dried) 50 mg. for resuspension to one cc. (14 doses by multiple puncture disk and 250 doses by the intradermal route) and capillary (single dose) units.

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Progress in Medicine

Antibiotic Sensitivities of Staphylococci

Data obtained by determination of bacterial sensitivity before and after antibiotic therapy indicate that "the administration of an antibiotic to a patient does not greatly influence the antibiotic sensitivity of staphylococci that are infecting that patient," report B. A. Waisbren and C. L. Strelitzer, *Am. J. Med. Sci.*, **238,** 202 (1959). They state that subtle influences other than antibiotic usage must be sought to explain the changing resistances of staphylococci to antibiotics. Their data do not show that combinations of antibiotics prevent increases in antibiotic resistance of staphylococci isolated from infections.

Chlorothiazide in Hypertension

A definite hypotensive effect from oral daily dosage of 0.25-1 Gm. of chlorothiazide (Diuril) was observed in 80% of 65 patients studied by C. C. Bartels, *et al.*, *J. Am. Med. Assoc.*, **170,** 1796 (1959). The effect was more pronounced in those with severe hypertension, and 12 of 23 patients who formerly had required ganglionic blocking agents were able to discontinue that therapy. Periodic determinations of the serum potassium level should be made during long-term chlorothiazide therapy. A drop in potassium level to 3.5 mEq./L. or lower was noted in 28 (43%) of the treated patients. This occurred in 12 despite concurrent dosage with 2–3 Gm. potassium chloride daily. Potassium deficiency may be associated with renal lesions and it can potentiate digitalis poisoning.

Chlorpropamide and Hepatic Damage

Hepatic damage was noted in three out of 49 diabetic patients in a clinical trial of chlorpropamide (Diabinese) therapy reported by G. Brown, *et al.*, *J. Am. Med. Assoc.*, **170,** 2085 (1959). The jaundice in two of the three cases was due to intracanilicular bile stasis, which appeared to be the mechanism that caused a sharp rise in the alkaline phosphatase level of the third case, but without jaundice. Complete recovery occurred in all. It is suggested that this reaction may occur more frequently when the dosage of chlorpropamide exceeds 500 mg. daily. Its use should be monitored by periodic determinations of the alkaline phosphatase level for the first six weeks.

Kanamycin—Ototoxic Reactions

Noting that the cases cited do not permit conclusions, the report by G. G. Lecca, *et al.*, *J. Am. Med. Assoc.*, **170,** 2064 (1959), describes the severe and apparently permanent loss of hearing in three Peruvian patients who received kanamycin (Kantrex) in the treatment of serious infections. A 46-year-old man received 40 Gm. in 16 days; a 62-year-old man received 14 Gm. in seven days, and in both cases tinnitus preceded impairment of hearing. There was no warning tinnitus in a 55-year-old woman who received 14 Gm. in two courses separated by an interval of five days. In all cases the deafness progressed after kanamycin was stopped.

Live Polio Vaccine—Spread of Immunity

A study of 56 household units, each family (previously treated with Salk vaccine) including at least three naturally susceptible members, only one of whom had one ml. of Sabin vaccine (single-strain virus suspension) squirted into the back of the mouth, showed that the virus was spread intra- and interfamilially. The report by H. M. Gelfand, *et al.*, *J. Am. Med. Assoc.*, **170,** 2039 (1959) concludes that the most important factor favoring intrafamilial transmission was low socioeconomic status. No illness was associated with either primary vaccine administration or contact infection.

Meprobamate in Tetanus Spasms

Intramuscular administration of 400 mg. of meprobamate in five cc. of polyethylene glycol every four hours greatly reduced morbidity in patients with tetanus spasms and only four of 19 nonaddict patients died, compared with seven deaths in 15 cases of nonaddicts recorded before the meprobamate therapy was used, reports M. A. Perlstein, *J. Am. Med. Assoc.*, **170,** 1902 (1959). The reaction to meprobamate was manifest within 15 minutes after i.m. injection and the control of somatically induced seizures lasted three to four hours. With heroin addicts, whose tetanus was generally attributed to the use of contaminated heroin, there were 14 deaths in 20 meprobamate treated cases compared with 26 deaths in 36 cases treated with other drugs, such as barbiturates and other CNS depressants.

Monoamine Oxidase and Psychotherapeutics

The inhibition of monoamine oxidase by 1 - benzyl - 2 - methyl - 5 - methoxytryptamine (BAS) in man is reported by A. Feldstein, *et al.*, *Science*, **130,** 500 (1959). The investigators hold that "since BAS, a tranquilizing agent, and Marsilid (1 - isonicotinoyl - 2-isopropylhydrazine), a psychoenergizer, are both monoamine oxidase inhibitors, doubt is cast upon the hypothesis that the stimulatory effect of Marsilid is due to its ability to inhibit monoamine oxidase.

Otrivin—Clinical Trial as Vasoconstrictor

A clinical study of the therapeutic effect of Otrivin [2 - (4 - tert - butyl-2,6 - dimethylbenzyl) - 2 - imidazoline-HCl; Ba - 11391] used as a nasal vasoconstrictor in 109 cases of upper respiratory disease, reported by A. L. Kolodny, *Antibiotic Med. & Clin. Therapy*, **6,** 452 (1959), indicated 59.6% received excellent effects, 33% good, 5.5% fair, and 1.8% reported poor effect. Side-effects, both local and systemic, were few and no rebound nasal congestion was observed. It is suggested that for children the 0.5% solution alone or in combination with an antibiotic and/or steroid should be used; for adults, the 0.1% solution.

Phenethyldiguanide (DBI)—Clinical Trials

Oral treatment with DBI of 12 patients with labile diabetes resulted in three having a successful response to DBI and lowered insulin dosage, reports R. E. Tranquada, *et al.*, *Am. J. Med. Sci.*, **238,** 187 (1959). Four of eight patients with diabetes secondary to pancreatitis or pancreatectomy were controlled on DBI alone. Four of 10 patients on high insulin dosage (50 to 100 units per day) were controlled on DBI alone. One of four tolbutamide failures was successfully controlled on DBI. A high incidence of intolerable side-effects was noted.

The physicians suggest that DBI will be less useful in the therapy of stable adult diabetes because of the frequency of side-effects but that its best application may lie in the stabilization of labile diabetes, the regulation of some patients with high insulin requirement and in the management of diabetics physically unable to give themselves injections.

Prescription Practice

New Prescription Products

Ademol Tablets

Description: Each scored tablet contains 500 mg. Ademol (flumethiazide), in which the chlorine atom in chlorothiazide is replaced with a trifluoromethyl group.

Indications: Diuretic in edematous patients. Saluretic and antihypertensive agent which potentiates the action of other antihypertensive drugs.

Administration: Orally, diuretic dosage similar to chlorothiazide.

Form Supplied: Bottles of 60.

Source: E. R. Squibb & Sons, New York 22, N.Y.

Allercur Tablets

Description: Each tan, scored tablet contains 20 mg. Allercur (clemizole.HCl), an antihistaminic.

Indications: Symptomatic relief of allergic and pruritic conditions. Claimed to enter bloodstream 5 minutes and skin 10 minutes after oral dosage. Drowsiness reported in 1–5% of patients.

Administration: Orally, 2–4 tablets daily in divided dosage; children 3–6 years, 0.5–2 tablets daily; children over 6 years, 1–3 tablets daily.

Form Supplied: Round amber bottles of 100. Rx required.

Source: J. B. Roerig & Co., New York 17, N.Y.

Humorsol Solution

Description: An ophthalmic solution containing 0.25% demecarium bromide, a potent long-acting miotic.

Indications: Treatment of chronic noncongestive (wide or open angle) glaucoma; relief of various secondary glaucomas with the exception of cases where uveal inflammation is still active; treatment of aphakic glaucoma as well as preoperative control of intraocular tension of glaucoma; antidote against harmful effects of atropine when used on preglaucomatous or glaucomatous eyes; breaking up peripheral synechiae.

Administration: Topically, by technic available to physician.

Form Supplied: 5-cc. dropper vial.

Source: Merck Sharp & Dohme, Philadelphia 1, Pa.

Midicel Acetyl Suspension

Description: Each 5 cc. of butterscotch-flavored suspension provides N^1-acetyl sulfamethoxypyridazine (Midicel acetyl) equivalent to 250 mg. of sulfamethoxypyridazine.

Indications: Treatment of bacterial infections.

Administration: 1 Gm. (4 teaspoonfuls) first day, then 500 mg. daily. Children, 30 mg. per Kg. of body weight (1 teaspoonful per 18 lb.) first day, then half the dosage daily. Higher dosage in severe infections.

Form Supplied: 4-oz. bottles. Rx required.

Source: Parke, Davis & Co., Detroit 32, Mich.

Permitil Tablets

Description: Each green, coated tablet contains 0.25 mg. Permitil (fluphenazine.di-HCl), a potent derivative of phenothiazine. Chemically it is 1 - (2 - hydroxyethyl) - 4 - [3 - (trifluoromethyl - 10 - phenothiazinyl)-propyl] - piperazine dihydrochloride.

Indications: Alleviation of symptoms of anxiety, tension, and agitation. It is claimed to exert no depressant effect nor to impair alertness.

Administration: Orally, 1–2 tablets morning and evening.

Supplied: Available about September 21 in bottles of 50 and 500. Rx required.

Source: White Laboratories, Inc., Kenilworth, N.J.

Phenoxene Tablets

Description: Each amber-colored, coated tablet contains 50 mg. Phenoxene; chlorphenoxamine [beta - dimethylaminoethyl(*p* - chlor - alpha-methylbenzhydryl)ether.HCl].

Indications: For symptomatic treatment of all types of Parkinson's disease; especially useful when rigidity and impairment of muscle contraction are primary complaints. For the relief of excessive tremor, better results are usually obtained when combined with other appropriate agents. Precautions: Minor side-effects, typical of most antiparkinsonism drugs, occasionally occur with Phenoxene, but are usually well tolerated.

Administration: 50 mg. three times daily; adjusted for the individual.

Form Supplied: Bottles of 100. Rx required.

Source: Pitman-Moore Co., Indianapolis 6, Ind.

Syntetrin for Injection

Description: Syntetrin, N - (pyrrolidinomethyl) tetracycline, as a dry, sterile, soluble powder in vials of 150 mg. and 350 mg., both with ascorbic acid and lidocaine for i.m. injection; 700 mg. with ascorbic acid only for i.v. injection.

Indications: Where rapid and prolonged tetracycline activity is desirable.

Administration: By i.m. or i.v. injection, once daily.

Form Supplied: Powder for i.m. injection, both strengths in single-dose vials; powder for i.v. injection in 700-mg. vial.

Source: Bristol Laboratories. Syracuse, N.Y.

Achrosurgic Spray Powder

The Surgical Products Division of *American Cyanamid Co.* has marketed Achromycin (chlortetracycline) in a pressurized spray powder form for topical use on surface wounds.

Actifed Tablets
Actifed Syrup

Scored tablets containing in each: Actidil (triprolidine.HCl), 2.5 mg., and Sudafed (pseudoephedrine.HCl), 60 mg.; and a syrup containing half the above quantities of the same drugs are marketed by *Burroughs Wellcome* for prophylaxis and treatment of symptoms of colds and allergies responding to antihistaminics and for respiratory tract congestion. Dosage, 3 times daily, for older children and adults, 1 tablet or 10 cc. syrup; children 4 months to 6 years, half dosage; infants through 3 months, 2.5 cc. syrup. Supplied in bottles of 100 tablets and pints of syrup.

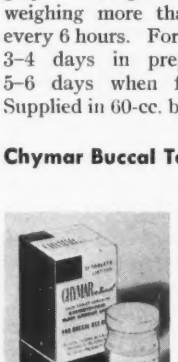
Betadine Ointment

An ointment containing the germicide Betadine (povidone-iodine complex; PVP+I) has been marketed by *Tailby-Nason* in 1-oz. tubes. The 1% solution also is available.

Chlorostrep Suspension

An orange-flavored suspension containing, in each 4 cc.: 125 mg. Chloromycetin (chloramphenicol), as palmitate; and 125 mg. dihydrostreptomycin, as sulfate, is marketed by *Parke, Davis* for treatment of enteric infections of the diarrheal type and for prophylaxis and treatment of infections encountered in intestinal surgery. Dosage, 4–16 cc.; children weighing more than 10 Kg., 4–8 cc. every 6 hours. For surgery, give dosage 3–4 days in preparation and after 5–6 days when fluids are resumed. Supplied in 60-cc. bottles.

Chymar Buccal Tablets



Scored, A-marked tablets containing, in each, 10,000 Armour units of chymotrypsin are marketed by *Armour Pharmaceutical Co.* for buccal use in control of inflammation, swelling, and pain. Supplied in bottles of 24 tablets.

Coricidin Nasal Mist
Coricidin D Tablets

The Coricidin combination of Chlor-Trimeton (chlorpheniramine), aspirin, phenacetin, caffeine, and phenylephrine has been marketed as a nasal mist and as decongestant tablets by *Schering* for o-t-c sale.

Cortrophin Gel Ampuls

Organon has marketed its corticotropin in gelatin, 40 u./cc., in 1-cc. ampuls in addition to the 5-cc. vials. Supplied in boxes of 5 ampuls.

Dechotyl Tablets

Yellow coated Trablets (trapezoid-shaped tablet) containing Decholin (dehydrocholic acid), desoxycholic acid, and dioctyl sodium sulfosuccinate are marketed by *Ames Co.* for use as a constipation corrective. A Freescription bottle of 14 tablets will be sent to all pharmacies. Regular package is bottle of 100.

Decabamate Tablets

Tablets containing, in each: 0.25 mg. dexamethasone (Decadron) and 200 mg. meprobamate are marketed by *Merck Sharp & Dohme* for oral use in symptomatic treatment in patients with allergic and inflammatory disorders complicated by excessive anxiety and tension, or in rheumatism and arthritis when complicated by muscle spasm. Supplied in bottles of 100.

Emprazil Tablets

Orange and yellow layered tablets containing in each; pseudoephedrine.HCl, 20 mg.; chlorcyclizine.HCl, 15 mg.; acetophenetidin,150 mg.; aspirin, 200 mg.; and caffeine, 30 mg., are marketed by *Burroughs Wellcome* for symptomatic relief of symptoms of common cold, influenza, and grippe. Dosage, 1–2 tablets 3 times daily; children 6–12 years, 1 tablet 3 times daily. Use with caution in hypertension. May cause drowsiness. Supplied in bottles of 100 and 1,000.

Mycolog Cream

A cream containing Kenalog (triamcinolone acetonide), Spectrocin (neomycin-gramicidin), and Mycostatin (nystatin), in a vanishing-cream base, is marketed by *E. R. Squibb* as an anti-inflammatory, antipruritic, antibacterial, and antifungal dermatologic preparation. Supplied in 5-Gm. and 15-Gm. tubes.

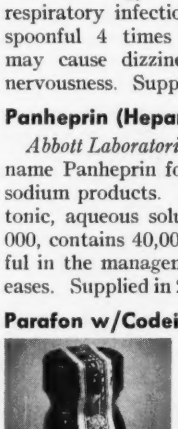
Norisodrine w/Calcium Iodide Syrup

A honey-mint flavored syrup containing in each 30 cc.: Norisodrine (isoproterenol) sulfate, 18 mg.; CaI_2, 0.9 Gm.; with alcohol 6%, is marketed by *Abbott Labs.* for relief of asthmatic attack and prophylaxis against asthma, and treatment of allergy-complicated cough and respiratory infections. Dosage, 1 teaspoonful 4 times daily. Overdosage may cause dizziness, palpitation and nervousness. Supplied in pint bottles.

Panheprin (Heparin Sodium)

Abbott Laboratories has introduced the name Panheprin for its line of heparin sodium products. A high potency, isotonic, aqueous solution, Panheprin 40,000, contains 40,000 u./ml., and is useful in the management of vascular diseases. Supplied in 2-ml. vials.

Parafon w/Codeine Tablets



Scored white tablets containing in each: Paraflex (chlorzoxazone), 125 mg.; acetaminophen, 300 mg.; and codeine phosphate, 15 mg., are marketed by *McNeil Labs.* for relief of severely painful musculoskeletal disorders. Dosage, 1–2 tablets 3–4 times daily. Occasionally, mild nausea, drowsiness, or dizziness may be noted. Supplied in bottles of 24. Class B taxable narcotic permissible on oral prescription.

Phemithyn Concentrate Solution

An aqueous solution containing 3.17% benzethonium chloride is marketed by *Flint, Eaton* for use as a vaginal cleanser. Douche—1:5000 (1 bottlecapful or 6 cc. with 1 quart or 950 cc. warm water); or 1:2500 for chronic cases. For tampon saturation—1:1000 (6 cc. with 190 cc. warm water). Supplied in 4-oz. plastic bottles.

Polanil Tablets

Tablets containing in each: Polaramine (*d*-chlorpheniramine) maleate, 2 mg.; Deronil (dexamethasone), 0.25 mg.; and ascorbic acid, 75 mg., has been marketed by *Schering* as a antihistaminic-steroid combination for use in control of severe hay fever, chronic asthma, and other allergies not responsive to antihistaminics alone. Supplied in bottles of 50. Rx required.

Rynatan Expectorant

A caramel-flavored suspension containing in each 5 cc.: carbetapentane tannate, 30 mg.; ephedrine tannate 5 mg.; phenylephrine tannate, 5 mg.; chlorpheniramine tannate, 2 mg.; and pyrilamine tannate, 12.5 mg., is marketed by *Irwin, Neisler* as an antitussive expectorant. The tannate compounds provide long action and permit twice daily dosage. Supplied in pints. Prescription required.

Simron Plus Capsules

Red, ovoid capsules containing in each: iron (as ferrous gluconate), 30 mg.; B_{12} with intrinsic factor, noninhibitory type, 1 unit; C, 150 mg.; folic acid, 1.5 mg.; and pyridoxine . HCl, 3 mg., are marketed by *Wm. S. Merrell* as a full-range hematinic for "difficult-to-treat" anemias. Dosage, 1 capsule 3 times daily between meals. Supplied in bottles of 100 and 1,000.

Sonazar Tablets

Tablets containing in each: mephenesin, 250 mg.; amobarbital, 25 mg.; and 3-(*o*-methoxyphenoxy)propanediol-1,2, Tulyn (Tutag), 50 mg., are marketed by *S. J. Tutag* for use as a tranquilizer in tension and anxiety states associated with hypertension, premenstrual periods, menopause, etc. Dosage, 1–2 tablets 3–4 times daily. Supplied in bottles of 100 and 1,000.

Trancopal Caplets 200 mg.

The muscle relaxant-tranquilizer Trancopal (chloromethazanone) is available in 200-mg. scored, green Caplets from *Winthrop Labs.* in bottles of 100 and 1,000. Also available are the 100-mg. scored, peach Caplets.

Women's Auxiliary *(Continued from page 612)*

From South Carolina: Mrs. George S. Inman (Greenville).

From South Dakota: Mmes. Noval E. Webb, Kenneth Redman—both of Brookings.

From Virginia: Mrs. Howard B. Nelson (Alexandria).

From West Virginia: Mrs. Edgar Tetrick (Shinnston).

Every effort is made to publish the names of all new members at the time they join the auxiliary but inadvertently they are sometimes omitted and for that we wish to apologize. If you joined at the Cincinnati convention and your name does not appear on this list, please notify us.

We wish to express our appreciation to everyone for his cooperation at the convention, the local committee for its excellent planning of a delightful program and the clockwork execution of it, the officers and members of our parent organization as well as the auxiliary and to the entire APhA staff who were always so gracious and thoughtful. It was wonderful to see old friends and make new ones. We hope that everyone is making plans to be present in 1960.

Dorothy M. Cusick, President
APhA Women's Auxiliary

new index system for medical literature

The American Medical Association and the National Library of Medicine in Washington jointly will begin January 1, 1960, to institute a new program for indexing medical literature estimated at 220,000 articles annually.

The new system, which calls for mechanizing the composition of the index itself, will not only speed up the reference service but will also be less costly.

Here, briefly, is how the new indexing system will work:

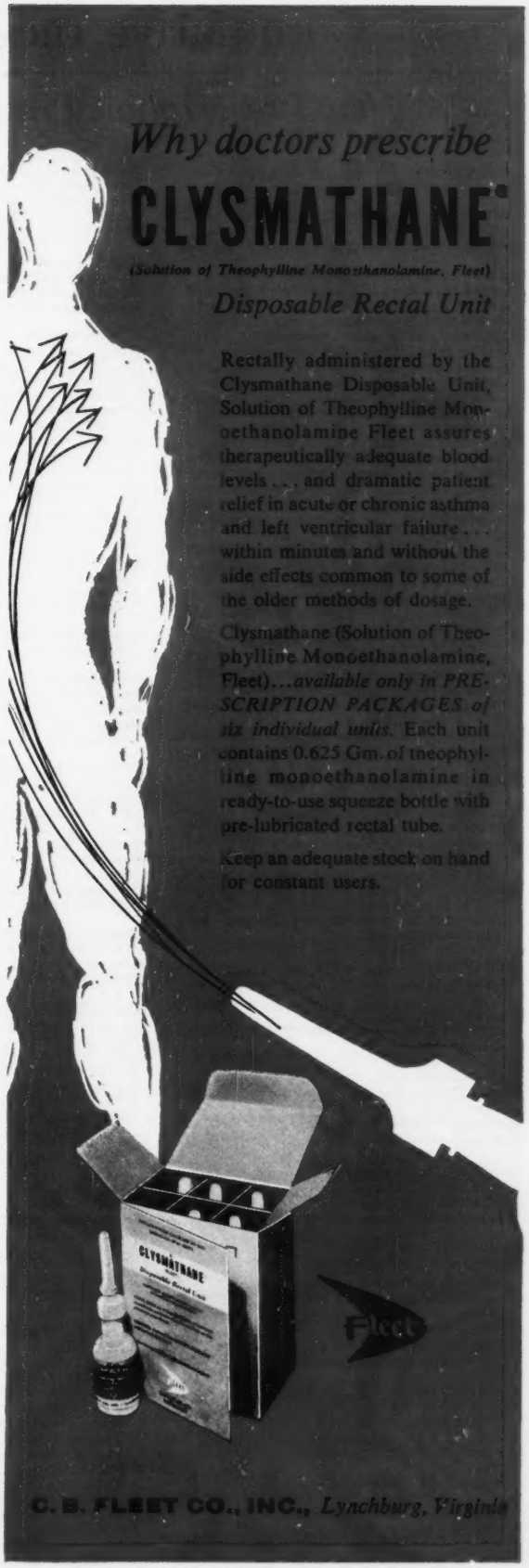
1. The American Medical Association will discontinue publication of its *Quarterly Cumulative Index Medicus*, compiled by the library staff. This Index served as an invaluable aid to physicians, teachers, editors and writers, students and libraries since it was started in 1916.

2. The *Current List of Medical Literature*, published by the National Library of Medicine, will be expanded in coverage to include currently published medical periodicals not covered in the past by either the National Library or AMA.

3. Beginning with the issue of January, 1960, the *Current List of Medical Literature* will appear in a revised format, using improved composition technic, and will be renamed *Index Medicus*. The new *Index Medicus* will be published monthly by the National Library of Medicine, and will be available on a subscription basis through the superintendent of documents, Government Printing Office.

4. AMA will publish annual cumulated volumes of the new index, which will be known as the *Cumulated Index Medicus*, beginning with the volume for the calendar year 1960. AMA will bear the cost of publishing the *Cumulated Index Medicus*, independently of the National Library. In publishing this index AMA will use cumulative copy, in the form of film negatives, prepared and furnished by the National Library of Medicine.

Dr. Frank B. Rogers, director of the National Library of Medicine, said the mechanized system will revolve around a new type camera (Eastman) which is capable of photographing text material at the rate of 230 cards per minute. The camera not only reduces printing costs, he said, but it also speeds up production which is all important because of the pressing need by physicians to have notice of current literature as quickly as possible. The savings incurred in the production operation make it possible to expand coverage to currently published medical periodicals not presently covered by any index.


Why doctors prescribe
CLYSMATHANE
(Solution of Theophylline Monoethanolamine, Fleet)
Disposable Rectal Unit
Rectally administered by the Clysmathane Disposable Unit, Solution of Theophylline Monoethanolamine Fleet assures therapeutically adequate blood levels . . . and dramatic patient relief in acute or chronic asthma and left ventricular failure . . . within minutes and without the side effects common to some of the older methods of dosage.
Clysmathane (Solution of Theophylline Monoethanolamine, Fleet)...available only in PRESCRIPTION PACKAGES of six individual units. Each unit contains 0.625 Gm. of theophylline monoethanolamine in ready-to-use squeeze bottle with pre-lubricated rectal tube.
Keep an adequate stock on hand for constant users.
CLYSMATHANE
Fleet
C. B. FLEET CO., INC., Lynchburg, Virginia

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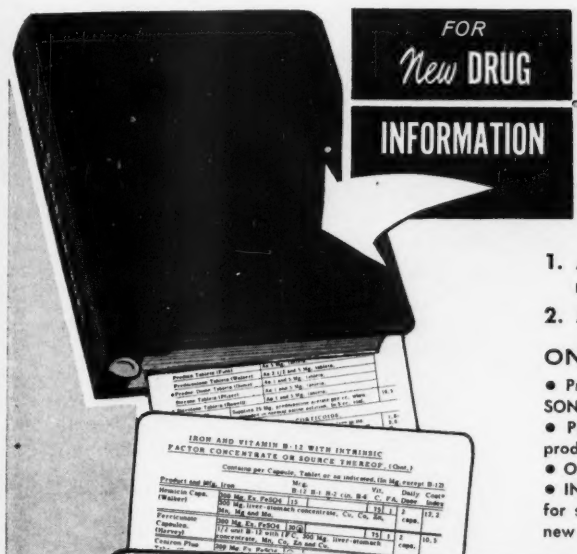

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